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Advertisers' Index on Page 25 Table of Contents on Page 26

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Ber
Bes
Big
Bin
Bla
Bla
Bor
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Bra
Bri
Bri
Bro
Bro
Bro

The ADVERTISERS' INDEX

A

Acme Fishing Tool Co.
Air Cleaning & Reaming Corp.
Ajax Iron Works
Ajax Rope Co. 179
Aluminum Co. of America
American Appraisal Co.
American Asphalt Paint Co.
American Cable Co.
American Car & Foundry Co.
American Mfg. Co. of Texas
American Radiator Co.
American Roller Bearing Co. 75
American Rolling Mill Co.
American Schaeffer & Budenburg Corp. 126
American Sheet & Tin Plate Co.
American Spiral Pipe Works
American Telephone & Telegraph Co.
American Well Works
Anderson & Anderson 180
Anderson, Carl B. 178
Andrews Steel Co. 170
Arbon, Paul & Co.
Arco Company, The 115
Armstrong Bros. Tool Co. 177
Askania, Werke, A. G.
Athey Truss Wheel Co.
Atlas Ball Co. 102
Auer, C. A.
Austin Co.
Axelson Machine Co. 21

B

B. & A. Specialty Co.
Baash-Ross Tool Co.
Babcock & Wilcox Tube Co., The 106
Baker Casing Shoe Co. 174
Baldwin Chain & Mfg. Co.
Barber-Greene Co.
Barnickel, Wm. S., & Co. 176
Barnsdall Refining Co. 6
Bartlesville Supply Co.
Beaver Mfg. Co. 175
Belle City Mfg. Co.
Berry's, James B., Sons Co.
Bessemer Gas Engine Co. 61
Bignall & Keeler Machine Works 10
Binks Spray Equipment Co.
Black Steel & Wire Co.
Blackmer Pump Co. 179
Blaw-Knox Co. 123
Borden Co.
Botfield Refractories Co. 128
Bovaird & Seyfang Mfg. Co. 173
Bovaird Supply Co., The 105
Braden Co. 131
Brady Conveyors Corp. 171
Braun, C. F. & Co. 9
Bridgeport Machine Co.
Bristol Co.
Broderick & Bascom Rope Co. 84
Brokaw, Dixon, Garner & McKee 180
Brooks Engineering Corp.
Brown, Arthur C. 178
Brownell Co. 179
Brown Instrument Co. 47
Brown & Thomsen 178
Brown Tool Co., Inc.
Bruce-MacBeth Engine Co.
Buckeye Traction Ditcher Co.
Buda Co. 119
Budd Wheel Co.
Buffalo Gasolene Motor Co. 86-87
Burns Tool Co.
Burt Corporation
Burt Mfg. Co.
Busch-Sulzer Bros. Diesel Engine Co.
Butler Mfg. Co.
Byers, A. M., Co. 14
Byron Jackson Pump Mfg. Co., Inc. 127

C

Campbell, J. A.
Canadian Pacific Railway Co.
Carbondale Machine Co.
Caudill, Samuel J. 178
Celite Products Co.
Central Forging Co. 49
Central Steel Co. 107
Central Tube Co. 176
Chain Belt Co.
Champion Machine & Forging Co. 98
Chaplin-Fulton Mfg. Co. 176
Chapman Valve Mfg. Co.
Chestnut & Smith Corp.
Chicago Bridge & Iron Works 45
Chicago Pneumatic Tool Co.
Chicago Steel Foundry Co.
Chisholm-Moore Mfg. Co. 104
Clapp, Frederick G. 178
Clark Bros. Co. 68-69
Clark, Robert W. 180
Classified Wants 140-141
Cleveland Tractor Co. 129
Climax Engineering Co. 136
Coatesville Boiler Works
Columbian Rope Co.
Columbian Steel Tank Co.
Columbus Forge & Iron Co. 180
Columbus Sucker Rod Co.
Continental Motors Corp.
Continental Supply Co. 65
Cook Paint & Varnish Co.
Cooper, C. & G., Co. 52-53
Cox & Sons Co., The
Crane Co.
Crane Packing Co.
Crown Central Petroleum Corp.
Cross Engineering Co.
Cushing, Tim, Tool & Supply Co.

D

D. & B. Pump & Supply Co.
Darling Valve & Mfg. Co.
Dart, E. M., Mfg. Co.
Davis, G. M., Regulator Co.
Davis-Miller Engineering Co. 171
Day, Roland B. 179
Dayton Pipe Coupling Co.
Dean Bros. Co. 177
Dean Hill Pump Co. 177
Dearborn Chemical Co.
De La Vergne Machine Co.
Delta Electric Co.
Detroit Graphite Co. 97
Diamond Drill Carbon Co. 177
Diamond Power Specialty Corp.
Dixon, Joseph, Crucible Co.
Dodge Mfg. Co.
Donovan Boiler Works, Inc.
Dresser, S. R., Mfg. Co. 35
Dunn Mfg. Co.
DuPont De Nemours & Co., Inc., E. I.
Durabla Mfg. Co.

E

Eagle-Picher Lead Co. 2
Eastern Torpedo Co.
Eclipse Paint & Mfg. Co. 110
Edward Valve & Mfg. Co.
Elliott Core Drilling Co. 124
Empire Refineries, Inc. 22
Emsco Derrick & Equipment Co. 18
Equitable Meter & Mfg. Co.
Inside Front Cover
Eureka Burner Co.

F

Fairbanks-Morse & Co.
Farley Machine Works Co.
Federal Supply Co.
Fenwick-Reddaway Mfg. Co. 170
Fisher Governor Co.
Foamite-Childs Corp.
Fohs, F. Julius 179
Foos Gas Engine Co.
Ford Chain Block Co. 172
Ford Motor Co.
Fort Worth Laboratories 178
Foxboro Co., Inc., The
Franklin Valveless Engine Co. 77
Frick-Reid Supply Co. 41
Full Crawler Co. 134

G

Gardner Governor Co.
Garlock Packing Co.
Gaso Pump & Burner Mfg. Co.
Inside Back Cover
General American Tank Car Corp.
General Motors Truck Co. 111
General Oil Tools Co.
Gilbert & Barker Mfg. Co.
Gilfillan Machine Works
Gomory, W. L. 180
Goodrich, B. F., Rubber Co.
Goodyear Tire & Rubber Co.
Gott, H. P., Mfg. Co.
Goulds Pumps, Inc. 178
Graham Brothers
Graver Corp. 147
Greenspon's, Joseph, Sons Iron & Steel Co. 168
Griscom-Russell Co. 167
Guiberson Corp. 55
Gulf Refining Co. 16

H

Halliburton Oil Well Cementing Co.
Harrisburg Pipe & Pipe Bending Co.
Hazard Mfg. Co. 175
Heppenstall Forge & Knife Co.
Herald Brothers 180
Hercules Motors Corp.
Hercules Tool Co.
Heydrick Mapping Co. 178
Hill, Hubbell & Co.
Hills-McCanna Co.
Hinderliter Tool Co.
Homestead Valve Mfg. Co.
Hood, H. H. 180
Hoover Steel Ball Co.
Hope Engineering & Supply Co. 71
Hopkins, Edwin B. 179
Hough, Charles N., Mfg. Co. 108
Houston Pump & Supply Co.
Hoyt Metal Co. 114
Hughes Tool Co. Back Cover
Humble Oil & Refining Co.
Hunt, Robert W., Co. 180
Huntley & Huntley 178

I

Illinois Glass Co.
Imperial Belting Co. 168
Imperial Royalties Co.
Ingersoll-Rand Co.
International Derrick & Equipment Co.
Front Cover
International Harvester Co. of America
International Supply Co. 67
Iron King Mfg. Co.

J

Jarecki Mfg. Co.
Jefferson Union Co.
Johns-Manville, Inc.
Jones, S. M., Co. 178

K

Kansas City Hay Press Co. 81
Kaw Steel Construction Co.
Kellogg, M. W., Co. 167
Kelly, John Eoghan 179
Kelly-Springfield Tire Co. 23
Kennedy Valve Mfg. Co. 169
Kerotest Mfg. Co.
Kerr, John B. 179
Keuffel & Esser Co.
Kewanee Boiler Co.
Key Boiler Equipment Co.
Kirk & Hoover 178

L

Landis Machine Co. 3
Larkin & Co. 116
Layne & Bowler Co. 17
Leidecker Tool Co.
Leschen, A., & Sons Rope Co.
Linde Air Products Co. 1
Link-Belt Co.
Longyear, E. J., Co. 179
Lucey Mfg. Corp. 120
Ludlow Valve Mfg. Co. 166
Lufkin Rule Co. 180
Lunkenheimer Co. 15

Mc

McCord Radiator & Mfg. Co. 118
McGregor Working Barrel Co. 174
McIntosh & Seymour Corp.
McJunkin Supply Co.
McKee, Arthur G., & Co.
McNutt, V. H. 179

M

Magnolia Petroleum Co. 95
Maloney Tank Mfg. Co. 122
Manzel Brothers Co.
Marion Machine Foundry & Supply Co.
Marsh Gauge Pole Co. 178
Mathieson Alkali Works, Inc.
Matson, George C. 179
Matthews, W. N., Corp.
Maverick, Phillip 180
Meier, E. C., Lubricating Co.
Merco Nordstrom Valve Co.
Messimer, H. H. 178
Metric Metal Works 89
Midwest Piping & Supply Co.
Miller Improved Gas Engine Co. 133
Miller, Max B., & Co., Inc.
Mineral Exploration Co.
Mine Safety Appliance Co. 166
Moon Mfg. Co. 177
Moore, Lee C., & Co., Inc. 57
Mosler Metal Products Corp.
Munn & Co. 176
Murray Rubber Co. 172
Murray Tool & Supply Co.
Myers, F. E., & Bro. Co. 164

N

National Carbon Co., Inc. 1
National Gas Products Corp. 51
National Lead Co.
National Petroleum Engineering Corp. 179
National Petroleum Marketers Assn.
National Pigments & Chemical Co. 91
National Supply Co. 92-93
National Transit Pump & Machine Co. 169
National Tube Co. 4
National Turnbuckle Derrick Co.
Newton Process Mfg. Co. 32
Norris Bros., Inc. 137
Norris, W. C.
North American Car Co.
Northern Fire Apparatus Co.
Northern Oil Information Bureau 177
Northrup Equipment Co. 112
Novo Engine Co. 135
Nuttall, R. D., & Co. 100
Nye Tool & Machine Works 7

O

O'Brien Steel Construction Co.
Ohio Steel Foundry Co.
Oil Conservation Engineering Co.
Oil Country Specialties Mfg. Co.
Oil Insurance Association
Oil Well Supply Co. 62
Oklahoma Steel Casting Co.
Oxweld Acetylene Co. 1

P

Parkersburg Machine Co.
Parkersburg Rig & Reel Co.
Partrige-Scotford Stamp & Stencil Co.
Patrick, R. S.
Pattin Brothers Co.
Penberthy Injector Co. 134
Pennzoil Co., The
Petroleum Appliance Co. 136
Petroleum Iron Works
Pforzheimer, Carl H., & Co. 164
Pickering Governor Co.
Pittsburgh Boiler & Machine Co.
Pittsburgh-Des Moines Steel Co.
Pittsburgh Meter Co. 139
Plymouth Cordage Co. 82
Porter & Co. 37
Powell, William, Co.
Power Mfg. Co.
Power Piping Co. 180
Power Plant Equipment Co.
Power Specialty Co. 19
Prescott Co., The 101
Prest-O-Lite Co., Inc., The 1
Progressive Brass Mfg. Co. 139
Pure Oil Co. 24
Pyle-National Co.

R

Ranney Oil Mining Co. 179
Ratigan, J. P., Co.
Reading Iron Co.
Reading Steel Casting Co., Inc.
Reed Roller Bit Co. 80
Regan Forge & Engineering Co. 109
Reid, Joseph, Gas Engine Co. 74
Republic Flow Meters Co.
Republic Iron & Steel Co.
Republic Supply Co.
Rich, John L. 178
Ring, DeWitt T. 180
Riter-Conley Co. 180
Robinson, A. 177
Roots, P. H. & F. M., Co. 8
Ross Heater & Mfg. Co., Inc. 139
Ross-Mehan Foundries
Ryerson, Joseph T., & Son 180

S

Safety Pulling Machine Co. 76
Shaffer, J. E., Co.
Shaffer Tool Works
Sharples Specialty Co.
Sheffield Steel Corp.
Sherwin-Williams Co.
Shippers' Car Line, Inc. 138
Simplex Equipment Co.
Sinclair Refining Co. 153
Sivyer Steel Casting Co. 103
Skelly Oil Co.
Smith, A. O., Corp. 13
Smith, Gene R. 179
Smith Separator Co. 12
South Chester Tube Co.
Southern Cornice Works
Southwestern Engineering Corp. 135
Southwestern Engineering Co., Inc.
Spang & Co. 117
Spang, Chalfant & Co., Inc. 59
Spence Machine Co.
Spencer Trailer Co.
Stalder, Walter 179
Stanley Belting Corp.
Star Drilling Machine Co. 5
States Engineering Co., The
Stearns-Roger Mfg. Co.
St. Louis Surfacer & Paint Co.
Strom Steel Ball Co.
Sullivan Co., The
Sullivan Machinery Co.
Superior Tube Co.
Swartwout Co., The

T

Taylor Instrument Co.
Templeton, Kenley & Co., Ltd.
Texas Company, The 78-79
Thompson, V. A. 179
Timken Roller Bearing Co. 83
Titusville Forge Co.
Titusville Iron Works
Toledo Pipe Threading Machine Co. 137
Trimont Mfg. Co.
Trumble Gas Trap Co.
Truscon Steel Co.
Twin Disc Clutch Co. 172

U

United Alloy Steel Corp.
United Iron Works, Inc. 138
United States Cast Iron Pipe & Foundry Co. 138
United States Rubber Co.
Universal Oil Products Co. 39
U. S. Tool Co.

V

Van Couvering, M. 180
Victaulic Co. of America
Victor Balata & Textile Belting Co. 72-73
Vogt, Henry, Machine Co. 163
Volz Engineering Equipment Co.

W

Wall Rope Works, Inc.
Walsh & Weidner Boiler Co.
Walworth Mfg. Co. 11
Warren Petroleum Co.
Waukesha Motor Co.
Westcott & Greis
Western Machinery Co.
Western Supply Co.
Westinghouse Electric & Mfg. Co. 20
Wheatley Bros. 129
Wheeling Steel Corp.
White Co.
Wickwire Spencer Steel Co.
Wico Electric Co.
Widdell Engineering Co.
Williams, Herbert E. 180
Williams, J. H., & Co. 161
Williamsport Development Co. 178
Williamsport Wire Rope Co. 125
Williams Tool Corp.
Wilson Oil Tools Corp.
Wilson Welder & Metals Co.
W-K-M Company, Inc.
Wood & Wood 178
Worthington Pump & Mach. Corp. 121
Wright, Harry F. 180
Wright Mfg. Co. 174

Y

Yale & Towne Mfg. Co. 113

Z

Zero Hour Torpedo Co.

WHAT AND WHERE TO BUY—PAGES 181-182-183

XUM

The OIL and GAS JOURNAL

PRODUCING REFINING MARKETING

VOL. 25. NO. 2. TULSA, OKLAHOMA, JUNE 3, 1926

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TABLE OF CONTENTS

SPECIAL ARTICLES

Output Millions Less Than Last Year 27
By Andrew M. Rowley
Crude oil production shows big decline in 12 months, indicating 1926 total will be less than 1925.

Oil Board Hears Hughes for Institute 29
Compulsory unit operation impossible under constitution. H. L. Doherty dissents and will file reply.

300,000,000 Bbls. of Gasoline in 1926 30
By Charles E. Bowles
Outlook on June 1 estimates demand for 850,000,000 bbls. of crude during year. 90,000,000 bbls. from imports and stock.

Prosperity This Years Seems Assured 31
By Andrew M. Rowley
Factors pertaining to consumption and production indicate basic conditions of petroleum industry are particularly good.

What Oil Has Done for State of Texas 32
By W. S. Farish
President of American Petroleum Institute tells Lone Star bankers of petroleum record there.

Estimates, Theories and Facts (Editorial) 34

Technical Questions Answered 36

Unabated Drilling in All Fields 38
Fails to discover any disturbing factor. Panhandle up to 38,084, bbls. average. Good wells in several areas. Louisiana wildcat failures.

Industrial Position of Carbon Black Industry 64
By Charles E. Bowles

Stratigraphy of Whitehorse Sandstone (Map) 70
By R. L. Clifton
Formation extends from Clarke County, Kansas, through Oklahoma into Texas Panhandle.

Present Operations in Trinidad 76

Mr. Hughes' Address Before Oil Board (Complete Report) 85

Oil for Domestic Heating Furthers Conservation 90
By L. D. Becker

Natural Gasoline Production Grows 99
By Neil Williams
Total capacity of all plants in United States now exceeds five million gallons daily.

Companies Operating in Colombia 104
By Charles E. Kern

FIELD OPERATIONS

Mexico 32
By George Blardone

Late Fields 38

North Central Texas and Panhandle 40
By C. D. Lockwood

Oklahoma 42
By J. L. Dwyer

Kansas 43
By J. L. Dwyer

Louisiana-Arkansas 44
By James H. Dameron

New Mexico—Artesia 46
By Special Correspondent

Canada 48
By Victor Lauriston

Rocky Mountain Area 48
By Frank B. Taylor

Gulf Coast 50
By P. L. McGreal

New Mexico—Farmington 50
By Special Correspondent

Southwest Texas 54
By B. D. Stevenson

California 56
By L. P. Stockman

Pennsylvania-West Virginia 58
By D. S. Wakenight

Kensucky-Tennessee 58
By Whit

Central West 60
By Whit

Michigan 60
By Whit

REFINING AND MARKETING

Tighter Tone in Oklahoma Gasoline 28
By Neil Williams
Prices on all products unchanged. Increased motor fuel demand expected after week-end consumption.

Firm Undertone Marks Chicago Market 142
By J. B. Waldo

Continued Firm Trend in East 143
By N. O. Fanning

Forty Major Companies in Refining 144
By C. O. Willson
Have 78.7 per cent of skimming capacity and 90 per cent of cracking facilities.

Refining and Marketing News 146

Plants Operators' Page 148

Refinery and Crude Prices 150-151

Tankwagon Quotations 152

Contact Filtration Literature 156
By Dr. C. K. Francis

Economy of Oil as a Boiler Fuel 162
By Allen F. Brewer
Results depend largely on specifications, preheating, cleanliness, leaks and draft control.

ARTICLES OF GENERAL INTEREST

The Advertisers' Index 25

Men Known in Oildom and Personals 62

Natural Gas Developments 64

Equipment and Supplies 66

Decrease in Stocks, Texas, Louisiana and Arkansas 82

Pipe Buyers Demand Early Delivery 118

Classified Want Advertisements 140-141

Oil Securities Reach New 1926 High 149
By N. O. Fanning

Big Wells in Gulf Coast Pools 170
By P. L. McGreal

Atlantic Seaboard Dominates in Consumption 172
By N. O. Fanning

Mexican Shipments in April 177

What and Where to Buy 181-182-183

Crude Petroleum Statistics 184

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Refinery Section Starts on Page 142

Output Millions Less Than Last Year

Highest daily average estimated production week ended May 30, 1925, 2,347,984 bbls. Lowest in 1925, January 3, 1,911,730 bbls.

Crude Oil Production Shows Big Decline in 12 Months Indicating 1926 Total Will Be Less Than 1925

By Andrew M. Rowley

Highest daily average estimated light oil production in 1925, week ended January 17, 1,525,220 bbls. Lowest in 1925, July 18, 1,374,173 bbls.

Production of crude petroleum in the United States last week averaged just 314,004 barrels a day less than it did for the corresponding week last year, despite the fact the output of crude has been showing a steady increase since the latter part of April. Also production for the 12 months ending May 31, totaled 749,477,000 barrels as compared to a total of 759,847,000 barrels for 1925, a difference of 10,000,000 barrels. This means that if production of crude in the United States is to equal that of 1925, this difference of 10,000,000 barrels must be made up during the next seven months and, in addition, production during that time must be kept up to the average for the last seven months of 1925. Without attempting to predict what may happen between now and next Christmas, present indications at least point to less crude production this year than last.

The Panhandle area in Texas was responsible for a major part of the increase in production registered in the United States last week, that field increasing its daily average output from 29,925 barrels to 38,084 barrels. The Urania Field in Louisiana added a large quota to the gain while Oklahoma and Kansas showed slight increases.

Drilling operations throughout the country are continuing at a high rate with sufficient results to encourage operators but without any large strikes which might prove a menace to the general situation, all of which tends towards prosperity for all branches of the industry. Crude oil is being withdrawn from storage in a majority of the areas of the country and the season of maximum demand for gasoline has opened.

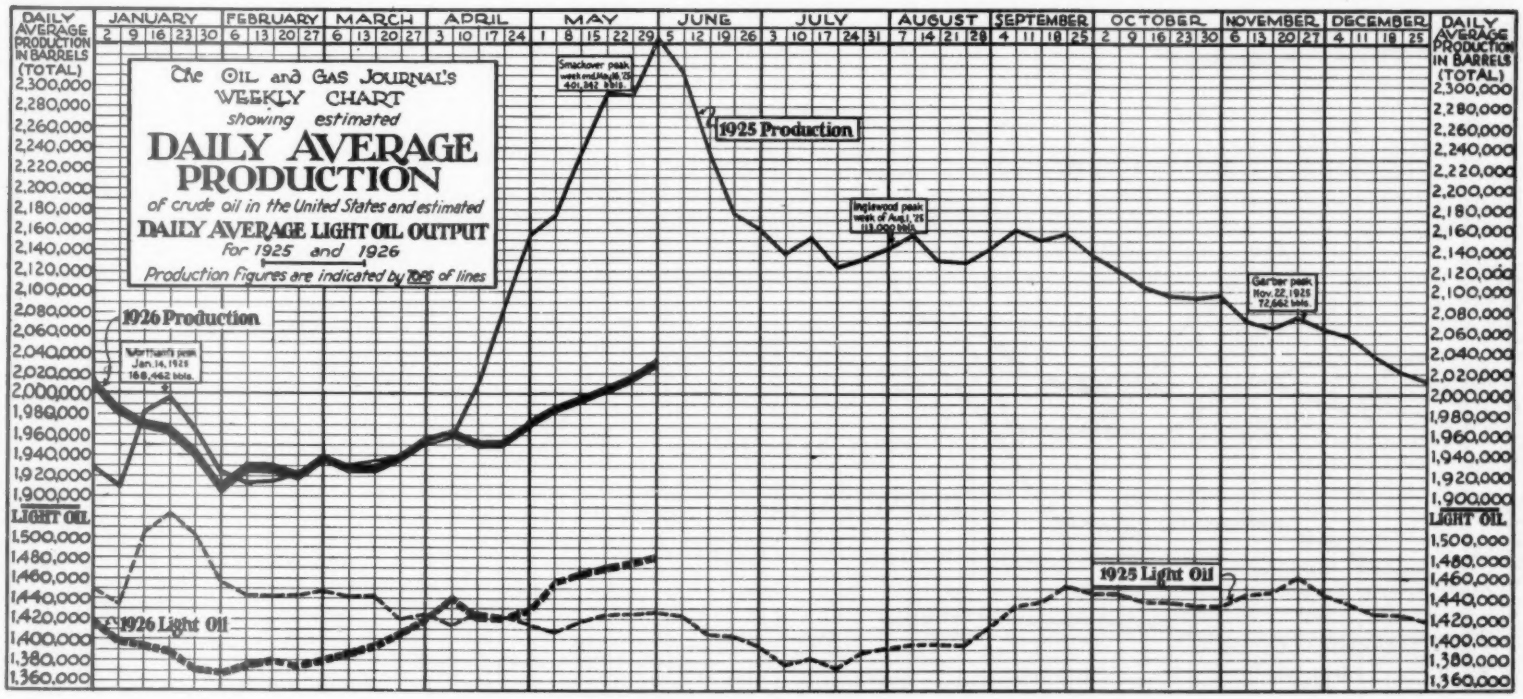
The entire petroleum industry, from present indications, should experience prosperous conditions during the next five months at least and there is no reason apparent now why these conditions should not continue for a longer period if all branches maintain a conservative policy regarding production and prices. The graph below giving the production curve of 1925 and for this year shows at a glance how production this year is millions of barrels less than for the same period last year.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity crude oil in the United States for week ended May 29, and a comparison with the previous week follows:

	May 29		May 22	
	Light	Heavy	Light	Heavy
Oklahoma—				
Tonkawa	36,080	.....	36,880	.....
Burbank	43,215	.....	41,285	.....
Other Osage Fields	33,830	.....	33,390	.....
Cushing and Shamrock	21,735	.....	21,695	.....
Bristow and Eastern Bristow	29,715	.....	29,760	.....
Cromwell	17,725	.....	17,965	.....
Papoose	12,220	.....	12,145	.....
Garber	37,615	.....	39,620	.....
Blackwell-Braman	19,710	.....	19,160	.....
Davenport	11,910	.....	11,935	.....
Wewoka	30,670	.....	30,915	.....
Northern Miscellaneous	101,645	.....	100,650	.....
Southern Fields	66,045	.....	65,210	.....
Total Oklahoma	462,115	.....	460,610	.....
North Louisiana	45,680	19,440	60,215	.....
Arkansas—				
Smackover Light	17,210	.....	17,275	.....
Smackover Heavy	.....	134,205	.....	135,350
Miscellaneous	22,885	.....	25,985	.....
Total Arkansas	40,095	134,205	43,260	135,350
North Central Texas	210,902	.....	197,664	.....
Powell	30,700	.....	30,300	.....
Mexia, Currie, Richland, etc.	15,866	.....	15,600	.....
Wortham	9,750	.....	9,200	.....
Kansas	107,980	.....	106,410	.....
Total Mid-Continent Area	923,088	153,645	923,259	135,350
Gulf Coast	.....	106,745	.....	109,430
Southwest Texas	.....	38,022	.....	39,230
Eastern	105,950	.....	105,100	.....
Rocky Mountain Area	105,030	.....	104,925	.....
California —				
Santa Fe Springs	49,000	.....	49,000	.....
Long Beach	109,000	.....	107,000	.....
Huntington Beach	44,000	.....	44,000	.....
Torrance	6,000	22,500	6,000	22,500
Dominguez	21,000	.....	21,000	.....
Rosecrans	17,500	.....	18,000	.....
Inglewood	29,500	21,000	30,000	21,000
Ventura Avenue	32,000	.....	29,500	.....
Remainder of State	40,000	210,000	41,000	214,000
Total California	348,000	253,500	345,500	257,500
Total United States	1,482,068	551,912	1,477,884	541,510
Grand Total	2,033,980		2,019,394	

Total Increase, 14,586 Bbls.; Light Oil Increase, 4,184 Bbls.


The OIL and GAS JOURNAL'S
WEEKLY CHART
showing estimated
DAILY AVERAGE PRODUCTION
of crude oil in the United States and estimated
DAILY AVERAGE LIGHT OIL OUTPUT
for 1925 and 1926
Production Figures are indicated by ends of lines
1926 Production
1925 Production
1926 Light Oil
1925 Light Oil
Smackover peak week ending May 29, 401,342 bbls.
Inglewood peak week of Aug. 29, 113,000 bbls.
Garber peak Nov. 22, 1925 72,662 bbls.
Wortham's peak Jan. 14, 1926 168,462 bbls.
JANUARY FEBRUARY MARCH APRIL MAY JUNE JULY AUGUST SEPTEMBER OCTOBER NOVEMBER DECEMBER
DAILY AVERAGE PRODUCTION IN BARRELS (TOTAL)
LIGHT OIL

WHAT AND WHERE TO BUY—PAGES 181-182-183

Tighter Tone in Oklahoma Gasoline

Prices On All Products Unchanged. Increased Motor Fuel Demand Expected After Week-End Consumption

By Neil Williams

The Oklahoma (Group 3) refined market continued unchanged the past week. The persistent lack of demand was still the dominating factor, but, except for a few concessions here and there, the quoted prices, on the whole, were fairly steady.

There was a noticeable trend on the part of sellers the last of the week to prevent a further break in the gasoline market. This was backed by a slightly improved tone in the June outlook but no interest of importance was aroused in the spot business.

Expectation of an enormous motor consumption of gasoline over the week end and Decoration Day was largely responsible for some of the better feeling. However, the effect of this consumption in all probability will not be felt in demand on refiners for several days and only a slight increase in orders was noticed Tuesday.

Most of Tuesday's business was reported to be merely an accumulation of routine orders of an additional day over the week end and all sales and buying offices in Tulsa were closed Monday to observe Decoration Day. Wednesday and Thursday are expected by refiners to mark the beginning of orders to come as a result of the holiday consumption.

Storms and heavy rains in many parts of the country will cut down early estimates of the consumption but as the really large consuming districts were little affected, refiners still are looking forward to the heaviest domestic demand for gasoline this year.

The last of the week saw a greater tightening of material for June delivery and buyers were being forced to higher prices to place orders. Earlier in the week limited quantities for June were being purchased at bargain prices when a soft undertone for the next month's markets developed but apparently this has disappeared and the outlook for the month now is more favorable.

One of the most optimistic points for June markets from a refiner's standpoint is the fact that little gasoline has been placed in the hands of the marketers. During the past two weeks there was a concerted effort among refiners to prevent or limit such sales, or at least at such low prices as might compete with their own material the last of the month.

With little cheap gasoline now out, refiners are expecting to get the full benefit of any increased demand which might arise during June. This also will mean a bigger play on the spot market, according to market students, in contrast to the past month, when most of the trading was in gasoline previously bought and on which a market already had been placed.

A more stabilized tone also was indicated in the gasoline situation with the advance of 1 cent a gallon in the tankwagon posting by The Texas Company and the announcement by the same company that it would discontinue immediately making quantity discount contracts throughout the Standard Oil Co. of Indiana territory.

Just how far reaching an effect the discount action of The Texas Company will have remains to be seen. While the Standard Oil Co. of Indiana, the dominating marketing company of the district, announces there will be no change in its policy or prices, the abolition of the discount practice by one leading marketing firm indicates a more settled condition exists.

The discontinuing of these contracts, coupled with the tankwagon change, real-

(Continued on Page 155)

REFINED MARKET BAROMETER

With a better tone developing in gasoline in the Mid-Continent and the Chicago district, refined markets of the country as a whole are being placed on a firmer foundation. Gasoline consumption increasing rapidly which is expected to be reflected in more favorable markets during June than during May. Fuel oils also are firm in price generally, due to limited supplies which are being drained by demand for cracking stock. Gas oil and distillates, although quiet, on the whole are unchanged as refiners are making great effort to dispose of these products. Kerosene, however, believed to have passed its peak consumption season, is sagging, particularly in the Mid-Continent where increasing stocks are forcing concessions. Lubricating oils are strong with prices in nearly all areas east of the Rocky Mountains up. The demand for all grades, excepting cylinder stocks, is picking up rapidly. Natural gasolines are gaining strength in California in contrast to the weakness shown in other fields.

Mid-Continent—Better feeling appears in Mid-Continent gasoline although actual spot demand shows little increase. Higher gravities weaker. Arkansas and Louisiana gasoline is stronger but unsettled due to tankwagon advances by the Standard Oil Co. of Louisiana Tuesday. Kerosene continues sluggish with prices generally off. Natural gasolines decline. Fuel oil steady in Oklahoma and Texas and stronger in Louisiana and Arkansas. Gas oil and distillates easy. Lubricants active.

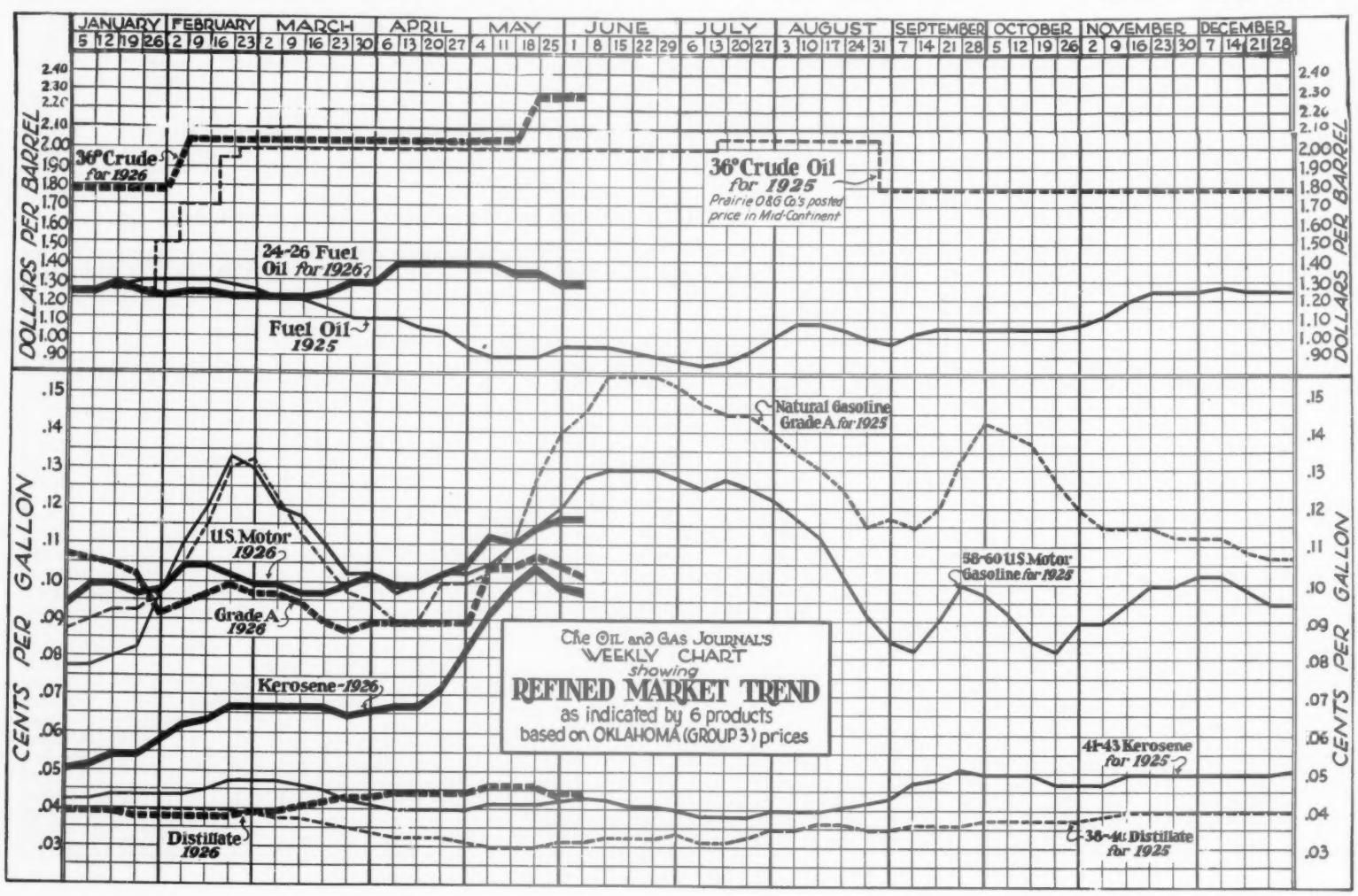
Atlantic Seaboard—Refined market trend continues firm. Additional tankwagon and export advances aid gasoline. Gas oil, fuel oil and kerosene featureless but prices firm in sympathy with gasoline. Lubricating oils, except cylinder stocks, higher. Wax up.

Pennsylvania—Gasoline demand increases. Kerosene past peak but prices firm. Fuel oil strong. Cylinder stocks slow. Wax marking time.

Chicago—Gasoline firmer because of expected demand. Kerosene off slightly. Furnace oil dull. Gas oil lower. Fuel oil firm. Lubricants higher.

California—Refined prices unchanged. Gasoline not showing strength anticipated. Natural gasolines, however, stronger.

Gulf Coast—Unchanged.


JANUARY FEBRUARY MARCH APRIL MAY JUNE JULY AUGUST SEPTEMBER OCTOBER NOVEMBER DECEMBER
DOLLARS PER BARREL
36° Crude for 1926
24-26 Fuel Oil for 1926?
Fuel Oil 1925
36° Crude Oil for 1925
Prairie O&G Co's posted price in Mid-Continent
CENTS PER GALLON
U.S. Motor 1926
Grade A 1926
Kerosene-1926
Distillate 1926
Natural Gasoline Grade A for 1925
38-60 U.S. Motor Gasoline for 1925
41-43 Kerosene for 1925
38-41 Distillate for 1925
The Oil and Gas Journal's WEEKLY CHART showing REFINED MARKET TREND as indicated by 6 products based on OKLAHOMA (GROUP 3) prices

Oil Board Hears Hughes for Institute

Compulsory Unit Operation Impossible Under Constitution Says Former Justice. Doherty Dissents and Obtains Permission to File a Reply

The address of Charles E. Hughes before the Federal Oil Conservation Board is carried in full in this issue of The Oil and Gas Journal, starting on page 85.

Washington Bureau,
The Oil and Gas Journal

WASHINGTON, D. C., May 29.—The study of petroleum conservation problems undertaken by the American Petroleum Institute as representing the oil industry, following President Coolidge's appointment of the Federal Oil Conservation Board a year and a half ago, is officially closed with the presentation of a 12,000-word statement by Charles E. Hughes, retained as special counsel for the institute, before the full membership of the Federal board comprising Secretary of the Interior Hubert Work, chairman; Secretary of War Dwight F. Davis, Secretary of the Navy Curtis D. Wilbur and Secretary of Commerce Herbert Hoover.

In view of the variety of remedies suggested within and outside the industry since the conservation issue has been raised, easily the outstanding feature of Mr. Hughes' analysis was his reduction to one or two courses, the possible remedies lying in the province of the government.

While he devoted considerable attention to the report on petroleum resources prepared by the institute's Committee of Eleven, of foremost importance, considering Mr. Hughes' eminence in the legal profession, was his interpretation of questions of law involved in some of the remedies proposed.

He disposed of the suggestions, principally advanced by Henry L. Doherty, for unit operation of pools as impossible under the Constitution and existing laws, his conclusions in such respects being coached in such a way as to indicate the dismissal of such projects as obviously legally impracticable.

Mr. Doherty, taking exception to Mr. Hughes' conclusions, asked, and was granted, permission to file an answer.

With this document the work of the Federal board in gathering information before presenting its conclusions is apparently finished. Some sections of its report are now in the process of printing, but when it will be ready to make its final report to President Coolidge remains as deep a mystery as the tenor of its conclusions.

One member of the board indicated that up to the time of the final hearing and the submission of the last document of information, the policy was to keep an open mind. The work of shaping up conclusions and co-ordinating views will begin immediately, however.

Stressed Legal Position

Mr. Hughes, while stressing legal and political considerations facing the government in its handling of the question of conservation, did not in every case view them as blocking remedial action as regards development on the public domain, Indian lands and private lands. He did stress the fact that in attempting to initiate certain reforms that might be considered within the realm of constitutional authority, Congress would have to reckon with the consequences that might result from a disturbance to economic law.

If Congress were seriously to enter upon a policy of conservation, with the intention of preventing overproduction while still observing the constitutional limits of its authority, he said, it might find it advisable to consider, as a part of such policy, the advisability of permitting co-operation among the owners of oil fields, but always under appropriate and adequate governmental scrutiny, to the end that these owners might not be stimulated to undue haste and a wasteful competition in the development of their properties and trade, but might have greater liberty to consult the economic conditions from time to time.

Then Mr. Hughes stated the possible consequences of such action as follows:

"Such a suggestion as this would probably at once encounter the opposition which threatens any policy of the curtailment of production having for its object the conserving of oil in the ground. If production is curtailed, the price of oil products will most probably be increased, and plans for co-operation among owners, and any other plans of conservation, which have a result of that sort are not likely to be viewed with favor by reason of any averseness on the part of the public to the cheapness owing to overproduction or because of any general apprehension engendered by scientific estimates of supply.

"The board must reckon with this situation. My desire is simply to point out that if a policy of conservation is to be considered, it must be framed intelligently, within constitutional limits, and the price of it must be paid by a public which is willing to make sacrifices in the interest of future years."

Federal Power Limited

Mr. Hughes practically reduced the government's scope of action toward conservation matters involving legal phases, to the above suggestion. Political action, he said, is superficially attractive, but it is beset with difficulties and it is not likely to succeed.

His major suggestion, therefore, was along the line of scientific remedy not involving questions of law.

"Scientific effort holds the promise of the future," he said. "Much has already been accomplished. The cracking process has done more for conservation than any legislative scheme which could be put into effect under the constitutional system. The government can accomplish much in stimulating and leading research. The oil industry is ready to co-operate in all practicable measures to promote research, to attain and diffuse more exact knowledge, to stimulate invention. Throughout the industry, at this time as never before, the keenest minds are at work studying every process, searching for improvement in every direction. This is, of course, largely due to the demands of competition. It is motivated by intelligent self-interest."

The reduction of the whole question to these conclusions, caused Mr. Doherty again to assert that while he has come forward on his side of the controversy with specific, definite recommendations to the board, those who have taken an opposite position have failed to do so, and he urged the board to secure such recommendations.

"If it is the position of these men that oil is so plentiful that there is no need for conservation and that you men should immediately ask for your discharge, I would like to see these men go on record in no unmistakable terms," he said.

Government's Own Policy

Mr. Hughes, however, practically wrote off Mr. Doherty's plan without a great deal of legal citation.

First, taking up the government's policy in relation to oil development on the public domain and on Indian lands, he brought out that a policy of delaying production or of conserving the oil in the ground, would be entirely contrary to the existing policy of the government as that is reflected in the Federal Leasing Act of 1920, and the permits and leases issued thereunder.

The characteristic of the present Federal system appears to be prompt, continuous and competitive drilling, as distinguished from the unified development and operation of an oil pool having as its underlying object the retaining of the oil in the ground until it is needed, he said, and after exhaustive anaylsis, he added: "It would appear that the idea of unit operation is negatived by the terms of this act and that competitive development is the foundation of the legislation."

He pointed out that there would seem to be no change in this policy under the recent proposed legislation and executive orders governing leasing of Indian lands, and he declared it would be idle to suggest an attempted regulation of production elsewhere, especially in view of the lack of constitutional authority on the part of the Federal Government to control production in the states, if the Federal Government was not in a position to enforce the curtailment of production, or some particular system of operation to facilitate the curtailment of production, within the public domain of the United States.

"If, however, the Federal Government, short of radically departing from its present policy as to the public domain, desires to remove artificial conditions which encourage, if indeed they do not absolutely require overproduction," he said, "it is in the power of Congress to do so by appropriate changes in its leases so as to give an opporaunity to its lessees to have a broader range of discretion and to permit them to determine their developments in the light of economic exigencies."

The question of Federal control of oil production in lands which form a part of the territory of the respective states, Mr. Hughes covered citing certain authorities and arriving at a conclusion which disposed of Mr. Doherty's principal contention.

No Constitutional Power

"It may be safely taken for granted," he said, "that under the power to regulate commerce, Congress has no constitutional authority to control the mere production of petroleum lands (other than Indian lands) within the territory of the state. All plans requiring unit operation or otherwise, which involve the assertion of such authority on the part of Congress, do not require discussion. They proceed from an utterly erroneous conception of Federal power. It does not further the policy of conservation to take up the public attention with futile proposals which disregard the essential principles of our system of government."

As regards the suggestion that the government can act under constitutional privilege for the national defense, this matter being one of Mr. Doherty's contentions, Mr. Hughes said the government of the United States is one of enumerated powers and is not at liberty to control the internal affairs of the states respectively, such as production within the states, through assertion by Congress of a desire to provide for the common defense or to promote the general welfare, and he added:

"This is too elementary to require discussion and it is impossible to believe that the legal advisers of the board will suggest that it proceed on any different view."

Mr. Hughes then pointed out that while the Federal Government is not in a position to control the mere operations of production within the states, it is within its power, if it deemed it advisable, to lessen the restrictions upon combinations in the conduct of interstate commerce and thus indirectly, and perhaps measurably, to affect production and to aid a policy of conservation with respect to oil.

As regards control of production of oil by the states, Mr. Hughes said:

Control by States

"I do not propose to discuss at any length the prospect of the control of production of oil by the states, for several reasons. First, because the curtailment of production in lands held in private ownership within the states would be of

(Continued on Page 156)

DROP IN INITIAL PRODUCTION AND INCREASE IN NEW WORK IN MAY

Notwithstanding there were 242 more wells completed in May in the fields east of California than were completed in April, there remained at the close of the May report 73 more rigs and 310 more drilling wells, a total of 383 more operations than at the close of the April report. This would indicate that during the month of May there was enough new work started to show a gross increase of 552 operations as compared with April. The increase in new work was not confined to Mid-Continent fields. The old eastern fields show a net increase of 111 operations along with an increase of 61 in completions. The North Central Texas division, which includes West Texas and the Panhandle along with the other fields, showed an increase of 243 in completions and at the same time an increase of 167 in rigs and wells drilling, which would indicate an activity in May 410 operations in excess of that during April.

In the matter of new production May compared badly with April but showed better than March. The total of initial production in May was 231,591 bbls. or 160 bbls. per well for the new oil wells. The record in April was 261,591 bbls. or 198 bbls. per well for the new oil wells, while in March the new production was 189,271 bbls., or 158 bbls. per well for the new oil wells.

The following summaries show the record by district and producing division of all the fields east of the California fields.

SUMMARY OF ALL FIELDS
Completed Work

Field—	Comp.	Prod.	Dry	Gas
Eastern	382	2,239	38	74
Central Ohio	28	595	5	17
Lima	43	814	5	0
Indiana	17	203	7	5
Illinois	29	480	9	6
Kentucky	98	1,061	22	2
Tennessee	1	500	0	0
Georgia	4	0	4	0
Kansas	165	16,230	57	4
Oklahoma	407	57,617	135	39
North Central Texas	630	65,527	272	9
East Central Texas	14	375	10	1
Gulf Coast	102	33,291	41	3
Southwest Texas	31	6,475	6	7
Arkansas	133	13,707	13	6
North Louisiana	104	17,569	17	9
Wyoming	50	4,490	7	0
Montana	24	5,368	2	3
Colorado	16	4,480	1	0
New Mexico	23	955	11	0
Total May	2,295	231,976	662	185
Total April	2,053	261,591	543	188
Difference	242	29,515	119	3

Summary of New Work

Field—	Rig	Drlg.	Ttl.
Eastern	175	439	614
Central Ohio	49	67	116
Lima	10	62	72
Indiana	5	33	38
Illinois	6	33	39
Kentucky	9	170	179
Tennessee	..	17	17
Mississippi	3	8	11
Alabama	..	4	4
Kansas	90	381	471
Oklahoma	248	1,227	1,475
North Central Texas	265	929	1,194
East Central Texas	2	29	31
Gulf Coast	53	168	221
Southwest Texas	33	102	135
Arkansas	49	114	163
North Louisiana	47	134	181
Wyoming	35	281	316
Montana	15	134	149

(Continued on Page 155)

300,000,000 Barrels of Gasoline in 1926

Outlook on June 1 Estimates Demand for 850,000,000 Barrels of Crude During Year, 90,000,000 Barrels From Imports and Stocks

By Charles E. Bowles
Petroleum Analyst, The Oil and Gas Journal

In the five months from June 1 to the end of October, 1926, the refiners of the United States will make a total of approximately 5,600,000,000 gallons of gasoline. Imports during this period will total about 60,000,000 gallons. This will mean a total current supply of approximately 5,660,000,000 gallons of gasoline during this five-month period.

During the same period the domestic demand for gasoline will total about 5,180,000,000 gallons and exports about 610,000,000 gallons, or a total demand of 5,790,000,000 gallons.

Demand and Supply

In other words, during this period the current gasoline situation will be about as follows:

	Gallons
Supply	5,660,000,000
Demand	5,790,000,000
Difference	130,000,000

It is estimated that during the period from January 1 to May 31, 1926, the production of gasoline was about 4,812,000,000 gallons and imports about 80,000,000 gallons—a total current supply of about 4,892,000,000 gallons.

During this first five months of the year the domestic demand is estimated at 4,060,000,000 gallons and exports at 618,000,000 gallons—a total of 4,678,000,000 gallons.

Setting these two estimates side by side we have:

	Supply	Demand
First 5 months..	4,892,000,000	4,678,000,000
Second 5 months	5,660,800,000	5,796,000,000
Total	10,552,000,000	10,468,000,000

The corresponding figures for 1925 were as follows:

	Supply	Demand
First 5 months..	4,363,000,000	3,940,000,000
Second 5 months	4,797,000,000	4,984,000,000
Total	9,160,000,000	8,924,000,000

And the corresponding figures for 1924 were as follows:

	Supply	Demand
First 5 months..	3,716,000,000	3,141,000,000
Second 5 months	3,801,000,000	4,298,000,000
Total	7,517,000,000	7,439,000,000

Big Summer Demand

Comparing the three foregoing sets of figures a few general facts seem apparent. It is obvious that during the first five months of a year the supply of gasoline is substantially greater than the demand—and that during the second five months the demand is greater than the supply. This general fact is graphically borne out by the spring upswing and fall downswing of the storage line.

And it is also true that during the second five months the supply of gasoline is greater than during the first five months—and that during the second five months the demand is greater than during the first five months. This is really restating the previous paragraph, but from a different angle.

As gasoline is a "seasonable" commodity, directly as to its demand, and indirectly as to its rate of manufacture, we find that as long as production, demand and stocks travel upward together, on an annual basis, the foregoing general principle will be maintained.

The tabulation for the first 10 months of 1924 and 1925 are from the final figures of the Bureau of Mines—and the figures for 1926 are estimates. It will be observed, however, that the estimates for 1926 follow the same general trend that was actually operative during the two preceding years.

Estimate for 1926

Applying the same principle to the last two months of 1926 we have the following estimate for the full year:

	Gallons
Supply	12,710,000,000
Demand	12,420,000,000
Difference	290,000,000

During 1925 the corresponding figures were:

	Gallons
Supply	11,046,000,000
Demand	10,692,000,000
Difference	354,000,000

And for 1924 they were:

	Gallons
Supply	9,104,000,000
Demand	8,960,000,000
Difference	144,000,000

The one outstanding fact of the oil industry is the tremendous growth in the demand for gasoline. And as long as gasoline demand increases from 15 to 20 per cent a year there is little hope of making very substantial reductions in the amount of gasoline in storage. This is very obvious by noting the excess of annual supply over annual demand.

But there is another angle to the question of gasoline stocks, as the following tabulation shows:

Year	Demand (Gals.)
1925	10,692,000,000
1924	8,960,000,000
Increase	1,732,000,000

While the actual increase in demand in 1925 over 1924 was 1,732,000,000 gallons, there was, in 1925, an excess of only 354,000,000 of supply over demand, as a previous tabulation shows.

Increase in Demand

The annual increase in the demand for gasoline has been four or five times as much as the annual excess of supply over demand—and as long as this marvelous growth goes on, gasoline stocks will probably show an annual growth, but in much smaller ratio than the annual growth in demand.

Taking the estimate for 1926 we have:

	Gallons
Supply	12,710,000,000
Demand	12,420,000,000
Excess	290,000,000

However, in 1925, the demand for gasoline totaled 10,792,000,000 gallons, compared with 9,000,000,000 gallons in 1924. This means an increase in 1925 over 1924 of 1,692,000,000 gallons—and in 1926 over 1925 of 1,728,000,000 gallons.

It seems only fair to assume that in 1926 the increase in demand over 1925 will be as much as 1925 increased over 1924, and, on this assumption, it is probable that the demand for gasoline in 1926 will be approximately 300,000,000 bbls.

In 1925 the crude oil run to stills totaled 740,000,000 bbls., and from it approximately 259,000,000 bbls. of gasoline were produced. This gives an average yield of about 35 per cent gasoline from "the average barrel."

On the basis of a 37 per cent yield in 1926 (because of increased cracking) the production of 300,000,000 bbls. of gasoline would call for the running of about 810,000,000 bbls. of crude to stills. A recovery of 38 per cent would call for approximately 800,000,000 bbls. of crude.

In addition to the crude run to stills in 1926 about 50,000,000 bbls. of crude will be produced, but will "disappear from the picture" through fires, evaporation and by being burned as crude for fuel.

It seems reasonable, therefore, to assume that, in round numbers, our "bill" for 1926 will be about as follows:

	Barrels
Crude oil	850,000,000
Gasoline	300,000,000

Theoretically, the argument for smaller gasoline stocks "sounds good"—but if, in 1926, the demand for gasoline increases well over 1,500,000,000 gallons over 1925, the refiners of the United States would display remarkable forbearance if they made only 1,000,000,000 gallons more gasoline than in 1925.

Lack 90,000,000 Bbls.

On the other hand, in 1925, we produced approximately 760,000,000 bbls. of crude oil. And if in 1926 we again produce 760,000,000 bbls. of crude a total demand for 850,000,000 bbls. will mean that imports and storage will have to make up the difference of 90,000,000 bbls.

Against the background of over 400,000,000 bbls. of crude oil in storage and almost 2,000,000,000 gallons of gasoline in storage we have the almost certainty, in 1926, of a demand for crude oil 90,000,000 bbls. in excess of our domestic production and a total demand for gasoline of at least 300,000,000 bbls.

With no new oil field of definitely large promise at the end of the first five months of 1926—and with the reasonable assurance of about what the year's demands for crude oil and gasoline will be, the remaining seven months seem more in the hands of the refiners than of the producers.

And, if both are conservative, their balance sheets for the year 1926 will be the best in several years.

GENEROUS PRICES ARE PAID FOR BLOCKS OF PANHANDLE LEASES

AMARILLO, Tex., May 29.—The estimated production by companies of the pools in the counties of Gray, Carson, Hutchinson, Potter and Wheeler, known under the general characterization of the Panhandle or Amarillo Field, is given below for the week ending May 22. It shows an increase of 11 wells and an increase of 7,672 bbls. in average daily production (estimated) over the record of the previous week.

Estimated production by company of the Panhandle, Tex., Field for the week ending May 22 follows:

Carson County

Company—	No. Wells	Av. Dy. Prod.
Amarillo Oil Co.	1	35
American Refining Co.	4	450
Gates Oil Co.	1	15
Gulf Production Co.	8	185
Mariand Oil Co.	5	1,230
W. W. Silk	2	75
Skelly Oil Co.	2	125
Sunny Jim Oil Co.	2	80
The Texas Company	8	145
Total	33	2,340

Gray County

Clark et al	1	5
Empire Gas & Fuel Co.	1	Off
Wilcox Oil & Gas Co.	3	485
The Texas Company	1	10
Total	6	500

Hutchinson County

American Refining Co.	1	Off
Badger Oil Co.	1	85
Barnum et al	1	Off
Canadian Oil Co.	3	270
Canyon Oil Co.	2	4,160
Centerfield	1	Off
Coble-Whittenberg	1	170
Devonian Oil Co.	1	25
Currie Phillips	1	1,500
Dixon Creek Oil Co.	3	*5,500
Amerada Petroleum (Douglas)	2	170
Dunnigan et al	1	450
Gates Oil Co.	3	125
Gibson & McMillan	1	200
Golding-Phillips	1	20
Gulf Production & Panhandle	9	2,539
Gulf Production Co.	3	600
Herring & McIlroy	2	190
Holmes et al	1	400
Lenix-Pattison	1	†2,200
Mariand Oil of Texas	1	Off
McIlroy Oil Co.	3	745
McMan Oil & Gas Co.	1	430
Middleton Oil Co.	1	40
Newby	1	265
New Domain	1	35
Phillips-Blaisdell	1	65
Phillips-Coble	2	630
Phillips-Gibson	4	1,070
Phillips-Parks	1	945
Phillips-Pulaski	3	485
Phillips-Williams	1	565
Prairie Oil & Gas	3	140
Roxana Petroleum	3	1,095
Skelly Oil Co.	5	215
Skiatax Oil Co.	2	810
Smith Bynum	1	195
Summitt Oil Co.	1	25
Spring Creek Oil	1	330
Sunny Jim Oil	2	515
Travelers Oil Co	1	260
Ward et al (Twin Six)	1	85
Westtex Oil Co.	2	525
White Eagle Oil & Ref.	3	885
Whittington	1	Off
Wilson-Empire	1	Off
Phillips-Whittenberg	1	216
Total	87	28,935

Potter County

Amarillo Oil Co.	1	35

Wheeler County

Gibson Oil	1	55
Midwest Exploration	3	25
Texhoma Oil & Ref.	1	13
Three X	1	Off
Total	6	93
Grand total in Panhandle	133	31,903
Grand total previous week	122	24,251
Increase	11	7,652

*10 per cent water.
†Not pipe line oil.
‡Drilling 20 feet deeper.

The Humble Pipe Line Co. has had men here looking over the field and the company is said to have in mind the building of storage tanks and the establishment of a small gathering system. The Sun Oil Co. has had men here, too, but what they think of the field they took back with them to the Dallas office without spreading it around the Panhandle.

The Phillips Petroleum Co. has leased the Plains pipeline, a 4-inch line from the Hutchinson County Field to Panhandle. It will be used as a crude oil line and will be known as the Bartex Pipeline. The company's gasoline line to Panhandle will continue in use as such.

The Skelly Oil Co. has two portable casinghead gasoline plants, one on the Lexin-Pattison Smith lease and the other on the McMan Oil & Gas Co.'s lease in Hutchinson County. The two plants have a capacity of 5,000,000 feet of gas a day.

The loading rack of the Plains Oil & Gas Co. was blown down in a wind storm recently and it was announced that it would take 10 days to repair it. This will work more or less hardship on operators in the field who were connected to the line.

J. O. Whittington has purchased a 54-acre tract southwest of the townsite of Charming, paying $100 per acre for it. It is understood that he intends to erect a casinghead gasoline plant on the property but it is difficult to understand

(Continued on Page 158)

GEOLOGIST HUNTLEY KILLED NEAR LAREDO

LAREDO, Tex., May 31.—Two young men, one a Mexican, are being held in the Zapata County jail in connection with the death of Sterling S. Huntley, Pittsburgh geologist, whose body was found 40 miles south of here late Saturday with three bullet wounds in the head and numerous knife wounds on the body.

The men were arrested by immigration officers last Wednesday, the last day Huntley was seen alive near the spot where he met death, on suspicions of having crossed the border illegally. Upon being searched two six shooters, a checkbook and deposit book on a Laredo bank were found and identified as the property of Huntley. Keys to a car said to belong to Huntley also were found in their possession.

Huntley recently came here from Pittsburgh, Pa., where he was a member of the firm of Huntley & Huntley. He had been doing some work here for the Benedum & Trees Oil Co. and was on his way to meet R. C. Holsworth, consulting geologist.

Prosperity This Year Seems Assured

Factors Pertaining to Consumption and Production Indicate Basic Conditions of Industry Particularly Good

By Andrew M. Rowley

With the petroleum industry entering upon the season of maximum demand for gasoline, the principal product, oil men and all others connected directly or indirectly with the oil business are naturally asking: "What may we expect during the remainder of this year in the way of price adjustments?" In other words, "will prices go up or down, and if so, when?"

The same men asking these questions would ridicule anyone who attempted to answer them specifically for being a weather prognosticator in Texas is an easy matter to trying to predict what will happen in the oil business six months ahead. In Texas they say anyone who tries to predict the weather is either a fool or a newcomer. In the oil business when anyone tries to tell what to expect six months from now, they are not quite so polite.

However, there are facts which cannot be gainsaid and certain features of the petroleum situation which may be used as a basis of calculation of what may reasonably be expected during the next few months, providing of course, some ambitious wildcatter does not open another Powell or Wortham. It is well for those interested in the oil business to take stock at this time of the present situation and developments which will have their effect upon the future, both as to production and consumption.

Gasoline Consumption

Of paramount importance is the consumption of gasoline. Coming down to a final analysis the quantity of gasoline burned in the automobiles of this country really determines the prosperity of the petroleum industry. The industry can take care of a period of overproduction of crude with possibly but a temporary period of depressed prices as it did just one year ago, and it could well afford to go through a considerable period of a greatly diminished output of crude, but let the consumption of gasoline fall off and the entire industry is affected immediately.

As was shown in The Oil and Gas Journal last week the official registration of passenger automobiles and motor trucks and buses in the United States showed a gain of 12.4 per cent during the first four months of this year as compared to the same period in 1925. That means a big increase in the quantity of gasoline which will be required to operate this greater number of gasoline motor-driven vehicles. But the increase in registration is but one angle to matter of calculating increased consumption of gasoline.

The demand for gasoline during the first three months of this year registered an increase of 21.9 per cent over the demand during the same period of 1925 while the consumption during the first three months of 1925 was 28.5 per cent greater than during the first three months of 1924 although the registration of passenger automobiles and trucks in the first four months of 1925 was 13.6 per cent greater than during the same period of 1924. Consequently, other important factors enter into the matter of gasoline consumption than the mere increase in automobile registration.

Women Drivers Big Factor

It has been pointed out that improved roads stimulate travel by automobile, thereby increasing gasoline consumption; that traffic congestion in the larger cities results in a much lower mileage per gallon with a consequent greater gallonage, because of the constant stopping and starting necessitated in business districts and elsewhere; that there are less four cylinder cars now than in previous years with a tendency towards six and eight cylinders; and that closed cars and buses have resulted in phenomenal increases in gasoline consumption due to the all-year-round use of the automobile and the supplanting and supplementing of street car service by buses in the cities and in travel between cities.

But one of the most important factors seems to have been overlooked. It is the vast increase in the number of women driving automobiles. It is safe to say that at least one woman member of every family having an automobile drives the car. And one woman is enough to keep that car going a good part of the time.

It does not take any stretch of memory to recall the time when most men drove their cars to town and parked them all day, using the automobile solely as a means of travel to and from the office. Such is not the case at present. If the man does not use a bus to go to the office, some member of his family drives him to town and then takes the car back home so that it will be available to the women members of the family for shopping trips, parties, vising friends or other social or business engagements for those of the family not tied down to an office.

The great increase in gasoline consumption is due in a large measure to this much greater use of the average automobile. It has been but a few years ago that few automobile owners drove their cars more than 5,000 miles in a year. That was considered a good mileage. Now there are not many cars which do not cover 10,000 miles as a yearly average. Good roads have played their part but the women members of the family are responsible for a large bulk of this extra mileage with the resultant increase in gasoline consumption.

The Crude Situation

An increase in gasoline consumption is almost a certainty. The situation relating to crude oil production has more uncertainties as more factors enter into it. But with five months of the year past, it is possible to sum up the present situation and the outlook in a fairly comprehensive manner.

In the first place, no new big oil pools have been discovered this year and none is in sight at this time. The increase in crude oil production registered durng the past few weeks and continued this week comes mainly from newly discovered productive sands in old fields and from the Texas Panhandle. The fact a big oil field existed in the Texas Panhandle has been known for a long time and its effect upon the general situation has, to a large extent, been discounted already. In addition, it must be remembered no oil fie'd can have much of a depressing effect upon the general petroleum situation unless its production is easily available for a market. That is not the case with the production from the Texas Panhandle.

While material increases in production have been recorded in the Panhandle during recent weeks, the industry should realize that the crude market is not receiving all of this production. Aside from not having pipeline facilities to market centers from the field, difficulty has been experienced in handling the oil, consequently, while production for the entire country recently has shown good increases, the fact remains of the total output of crude last week the average for the Panhandle of 38,084 bbls. a day does not figure as prominently as would a similar production in other fields or areas with facilities for handling and marketing all the oil. I am not trying to give the impression that any crude produced and brought to the surface of the ground will not eventually have some effect upon the crude petroleum situation. But the fact remains crude which does not reach a market quickly cannot have any great immediate effect upon the general situation.

The Urania Field in Louisiana, another source of the increased production recently and which averaged 19,440 bbls. daily last week, is a heavy oil, with a limited value and of very little effect upon the petroleum situation in general.

Outlook As to Production

No substantial increase in production can be expected from present operations in Oklahoma and Kansas and these states will do well if they maintain their present level of production throughout the summer. The big increase being registered in north Texas is coming largely from the Panhandle area although other sections are adding their quota to the gain. However, these other gains are comparatively small and will not have any widespread effect.

Increased prices for crude have stimulated drilling in the Gulf Coast and southwest Texas areas but production there will not show any material increases unless present indications are wrong. It will require a large number of completions to prevent a decline in output in those sections.

California may be expected to average around 600,000 bbls. a day, about its present output, for some time to come.

Deeper drilling in several fields with recent good completions which give promise of much new production, will serve to offset the natural decline in older fields in that state.

The Sunburst Field in Montana has recorded big gains recently but operators there are handicapped by lack of adequate facilities for handling the production and the output probably will be held down to the quantity which the pipeline companies can handle.

Foreign Countries

In considering conditions in the United States, it is necessary to include production in Mexico, Venezuela, Colombia and other South American countries, as a major part of the production from these countries will either find its way into the United States or take the place of crude which otherwise would be exported from this country. Mexico is on the decline and has been for some time. It is not likely to show any big increase in the near future, rather a further decline may be expected. Venezuela and Colombia already have a good production and the pipeline in Colombia is now delivering crude to seaboard at a rate estimated at approximately 30,000 bbls. a day. That means just that much more crude available for refineries along the Atlantic seaboard in this country.

Crude oil is being withdrawn from storage in Oklahoma and Kansas at the rate of about 125,000 bbls. a day. This condition has obtained for a long time, with a withdrawal estimated at 200,000 bbls. a day in effect up until about five weeks ago. For the first time since 1923 stocks of crude and other products in California were decreased in April, the decrease being in addition to the quantity destroyed by fire during April. Stocks in the Gulf Coast, north and central Texas and Louisiana and Arkansas also showed declines.

Industry in Good Shape

The petroleum industry is in better shape now than it has been for years. In previous years crude price rises were announced in the winter months only to be followed in the summer, or period of peak demand, by decreases. This year the price increases were announced somewhat later, at a time when demand was increasing, with the result there is good reason now for the belief the industry will be able to maintain its price schedule through the summer and benefit materially from the big demand of this season.

Of special significance is the fact that while production of crude petroleum during 1925 totaled 759,847,000 bbls., the production for the 12 months ending May 31 of this year totaled only 749,477,000 bbls., a drop of more than 10,000,000 bbls., with a further drop during the next month, in the 12-month period, probable. In other words, to equal last year's production we not only will have to make up that 10,000,000 bbls' production during the remainder of this year but maintain production to the level of the last seven months of last year.

All in all, the petroleum industry this year should enjoy one of the most prosperous periods of recent years. There is great activity in all fields, resulting in good business for oil field equipment concerns, and sufficient new production is being obtained in these operations to make the drilling profitable, as a general average, for those engaging in it.

GASOLINE MANUFACTURERS APPROVE EDUCATIONAL AND RESEARCH PROGRAM

At a special meeting of the Association of Natural Gasoline Manufacturers in Tulsa Tuesday, the association approved the plans of the board of directors for a research and educational campaign. The board of directors on May 18, made tentative arrangements for this program subject to the approval of the association membership.

The decision follows the discussions at the annual meeting of the association early in May at Tulsa, when several papers were presented dealing with technical subjects centering around the value of natural gasoline as a motor fuel. It is intention of the association under the program approved Tuesday to continue this research work. The results of these investigations and those already completed will be made known to users of natural gasoline through an educational program, which will include extensive advertising. Drs. E. H. Leslie and G. G. Brown of the University of Michigan have been retained by the association in connection with the research work. These two professors are authorities on motor fuels and have recently devoted considerable time to natural gasolines. The association will support two fellowships at the University of Michigan to carry on research work.

D. E. Buchanan, vice president of the Chestnut and Smith Corp., Tulsa, is chairman of the committee which will have charge of the research and educational program. Other members of the committee are L. F. Bayer, Tidal Refining Co., S. C. Carney, Roxana Petroleum Corp., G. G. Oberfell, Phillips Petroleum Co., H. R. Johnson, Akin Gasoline Co. and A. V. Bourque, secretary of the association.

H. A. Trower, sales manager of the Phillips Petroleum Co., Bartlesville, Okla., has been appointed chairman of the committee on finance which will raise the funds to carry out the program.

What Oil Has Done For State of Texas

President W. S. Farish of American Petroleum Institute Tells Lone Star Bankers Record of the Industry There

By W. S. Farish*
President, American Petroleum Institute and President, Humble Oil & Refining Co.

Since the discovery of oil at Spindletop in 1901, the activity of the industry in our State has been increasing yearly. With practically nothing invested in the oil business in Texas at the beginning of 1901, there is now $1,250,000,000 so invested, including investments in leases, drilled wells, pipelines, refineries, tank cars and sales equipment. Investments in this great business in the United States total more than $9,000,000,000. So that, the growth and extent of the business in Texas has been in a measure paralleled by the growth and extent of the business in the United States, with probably one-eighth to one-seventh of the total investment of the United States in Texas.

Competition in the acquisition of leases, the drilling of wells and obtaining a production in this State and in this industry is very keen. Today the four largest companies in this State are producing only about one-third of the oil, the other two-thirds being produced by hundreds of companies and individuals. The facts must convince any unprejudiced mind that there is no business conducted today that is as highly competitive as the oil business.

Gasoline today is the most important commodity of commerce that is selling on a prewar basis of value. A pound of cotton, a bushel of wheat, a bushel of corn, 1,000 feet of lumber will all buy more gasoline today than they would before the war.

Pays Enormous Taxes

This great industry has at all times, and under all conditions, met every demand made upon it by the public or by the Government in peace or in war. The industry today serves the Government as a collecting agency, which without compensation and at its own expense collects a sales tax—the so-called gasoline tax—a service unique and new in our history. In Texas alone this industry collects for the State a sales tax on gasoline of approximately $4,000,000 a year. The industry pays in direct ad valorem taxes at the same rate and in the same proportion that all property and industry pays. In addition to all of this, the industry pays to the State on every barrel of oil produced a gross production tax which totals $7,250,000 annually. It is entirely true and safe to say that the industry by reason of these special taxes, not only in Texas, but throughout the whole United States, is being taxed more and at a higher percentage than any other industry. The oil business in its total taxes is paying well in excess of 40 per cent of the total taxes paid to our State, and the taxes paid by the oil industry today to the State Government equal the total taxes received by the State from all sources 10 years ago.

In my judgment, bankers are interested in the oil business from many different angles. The oil business is largely a cash business. Credits are for short periods. Frozen loans in the oil business are almost unknown. Production and other property in the oil business have just as solid value as any other class of security for loans. It is well said of the oil industry that looking for oil, or drilling wells, is very hazardous and an extreme gamble. This is undoubtedly correct because statisticians have shown us that the producing industry as a whole has spent more money in an effort to find and produce oil than the oil produced has been worth. The risks are great and the successful find or discovery furnishes the incentive for wild speculation, but after discoveries are made the value of an oil property is just as easily ascertained as the value of any other property, at least to the extent of safe security for a loan.

*Before the Texas State Bankers Association at Galveston.

Brought Much New Money

Bankers are also interested in the fact that in the last 25 years the oil industry has brought more new money into our State than all other industries combined. It has built up cities, enhanced the value of property and made active and busy communities all over the State. The pay rolls of the oil companies in the State aggregate approximately $250,000,000 yearly. The amount of money spent by the industry for bonuses and leases aggregated approximately $225,000,000 last year. The oil industry, through the payment of bonuses, is revolutionizing the value of millions of acres of so-called waste or grazing lands in the State and is giving new values to immense areas. Great riches have been added to the University lands in many counties over the State due to the efforts of the oil producer.

May I dwell a moment on what these vast expenditures mean to the business of the State, to your bankers in deposits, to the thousands of landowners all over the State in bonuses and royalties, to the 400,000 people directly dependent upon the oil industry for their living? This great distribution of money by the oil industry furnishes, in large measure, the lifeblood that quickens and sustains the commercial activity of our entire State.

In addition to the fact that the oil industry has millions of dollars invested in pipelines, handling an enormous tonnage of oil, the last available record shows that the gross tonnage of oil and its products handled by our railroads in our State is greater than that of any other industry. To contrast this briefly, the total tonnage of petroleum and its products in Texas, for the last year that figures are available, was 13,216,889 tons, or about 17½ per cent of all tonnage moving in the State. Its movement is more than six times as large as that of cotton or wheat, five times larger than the movement of livestock, including all animal products. It is by far the largest single commodity carried by the Texas rail lines and I believe that the same situation is true throughout the entire Southwest. This takes no account of pipe and steel and other heavy tonnage necessary to carry on the oil industry.

One interesting thing in connection with this industry and I should think of especial interest to you bankers is the fact that it is the oil industry in the State of any magnitude, that in its manufacturing branch, really manufactures more of its raw material than is produced in the State. As a matter of fact, the oil industry manufactures in excess of 100,000 bbls. per day more oil than is produced in Texas.

Future of the Industry

What about the future of this industry in Texas? We have all producing rocks from the very old to the new. We have all types of producing structures in which oil accumulates. Oil is found in this State from Amarillo on one corner to Orange on the other, from the Rio Grande Valley in the southwest to Panola County in the northeast.

The geologists, who are thoroughly familiar with the geology of this State, by reason of years of study, believe that there are 151,000,000 acres of land in the State within which it is possible to discover oil fields and produce oil; this area represents about 87 per cent of the total area of the State. This does not mean that the whole 87 per cent will produce oil, for only a small part of it will produce but it does mean that the whole 87 per cent is prospective, and within this area, at widely spaced intervals perhaps, oil fields will be found.

The important fact here is the large percentage of our people—farmers landowners and others, who are interested in seeing this whole area tested and developed for its possible production. And I might even add that every citizen of this State is a potential partner in the oil industry. We have an empire of oil developed and to be developed.

The oil industry has been developed and built up with foreign money, that is money from outside of the State. The property and values, however, are all in Texas and are being taxed in Texas.

For one reason or another the impression has been abroad in the East, in the money centers, that Texas was not favorable to outside money. As a matter of fact, and as a matter of record, because of this feeling and because of the fact that foreign money was shy in coming to Texas, Texas people have paid a penalty. This penalty is measured by interest rates. Our ranchmen, our landowners, our farmers and our industry over the past have paid higher interest rates than similar properties in other States. To express it differently, the average borrower in Texas until recently has paid 1½ per cent more interest for his money than the average borrower in other States.

In my judgment, foreign investors have at last been convinced that Texas is not unfriendly, but welcomes and will protect legitimate investments from whatever source they may come. No better or more convincing evidence of this friendly attitude on the part of our State can be offered than the passage by our last Legislature of a law known as Senate Bill 180.

Foreign Money Welcomed

The passage of this bill by the Legislature of Texas was an affirmative declaration to the public of the United States that Texas welcomed foreign money to develop its resources and its industries, and that Texas through this act itself affirmatively stated that it was recognized as lawful for a foreign corporation to exercise the same ownership of property in Texas as is granted to foreign corporations in every other State in the Union. The laws of Texas authorize the forming of corporations in Texas to own stock in corporations of other States.

The passage of this bill changed in no way a single antitrust law of the State of Texas. It is by its terms expressly "subject to the provisions of the antitrust laws of the State of Texas." Under this law the same company can not lawfully own stock in two Texas corporations engaged in the same business or in competitive business. It changed in no way the organic law of the State of Texas. It changed in no way the fixed property rights of any individual or corporation in the State of Texas. It has simply said to the public that in order to vote stock owned in a Texas corporation you do not have to go through trial and final decision by the Supreme Court to show whether in your particular case such ownership is legal or not. It says to the foreign corporations in language that can not be misunderstood—if you invest in stock in a Texas corporation, you must obey the laws of Texas and especially the antitrust laws, and so long as you do obey our laws, our people and our government will protect you from injustice and plunder, political or otherwise. In my judgment, this one act has done more to create confidence and stability in the value of Texas properties and Texas securities than anything that has ever occurred in the development of our great State.

Its Reassuring Influence

This law, when heralded in the money markets of the country, was a reassuring influence, causing the influx of capital from other states. Not only does it aid in bringing necessary capital into the State, but it aids in bringing it in the most needed and most helpful form of investment; that is, in the form of stock ownership. In financing industrial development all the factors of safety available must be provided. If necessary capital is borrowed by citizens of Texas, the procedure is far more hazardous than is such capital were procured by the sale of stock.

Borrowed money must be paid back at

(Continued on Page 154)

MEXICO HAS ONE OF BEST WEEKS IN NUMBER OF COMPLETIONS

By George Blardone
Mexican Bureau, The Oil and Gas Journal

TAMPICO, Mex., May 29.—One of the best weeks in the history of Mexican fields, insofar as the mere number of completions are concerned can be considered for last week when 26 wells were completed; and even balance—13 dry holes, or failures, and 13 producers. The total new production, potentially considered from the 13 producers can be placed at 93,250 bbls. Of these the four most important, i. e., Huasteca Petroleum Co.'s No. 68 Tierra Blanca, in the south fields, rated for a potential head of 60,000 bbls.; Mexican Petroleum Co.'s No. 71 La Dicha, northern fields (Ebano), rated 10,000 bbls.; same company's No. 53 Chijol, rated 8,000 bbls., and its No. 101 La Dicha, rated 3,000 bbls., have already been reported.

Consider the following: Panuco leads the list with Tampascos Oil Co.'s No. 18-A Robles, called a 5,000-bbl. well at a shallow depth of 1,655 feet. Mexican Sinclair Petroleum Co.'s No. 23 Tananturo is rated 3,000 bbls. at 1,820 feet. Transcontinental Petroleum Co.'s No. 25 Barbarena is also listed for 3,000 bbls. at 1,570 feet. The same company has two fluid wells in the Tanchicuin that should prove strippers, i. e., Nos. 2 and 3. Lot 1, each rated 1,000 bbls. fluid, showing some salt water. The minor completions follow: East Coast Oil Co.'s No. 61 Milpa, (Panuco) has 100 bbls. at 2,010 feet. New England Fuel Oil Co.'s No. 21 Delicias (Panuco) is a 50-bbl. well at 1,805 feet. Cia Financiera de Pet.'s No. 7, Lot 14 Paciencia (Topila) is a 500-bbl. well at 2,150 feet. Mexican Petroleum Co.'s No. 23 Midway is good for 350 bbls. at 1,820 feet. Venable and others, in the Caracol, No. 1, is good for 50 bbls. at 2,721 feet.

In the south fields, Cia. Pet. Financiera, No. 29 Chiconcillo, is good for 200 bbls. at 2,405 feet, rather a deep depth for even so small a well.

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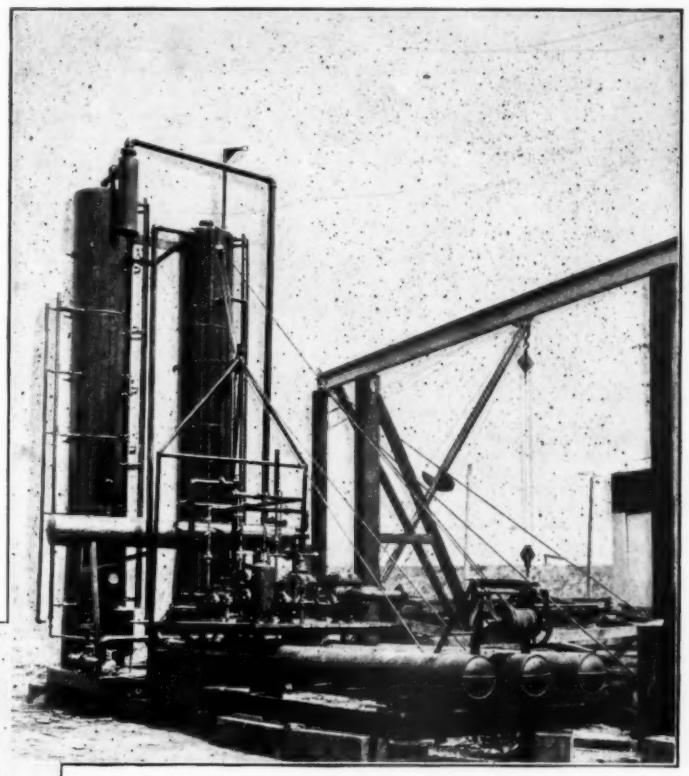

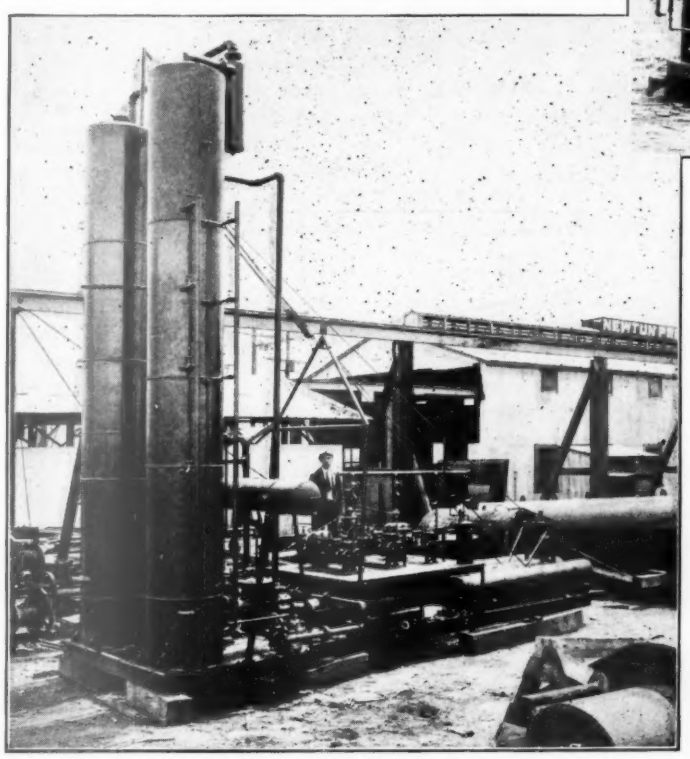

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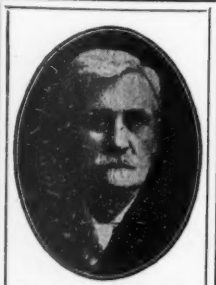
FULLERTON, CALIFORNIA

The OIL and GAS JOURNAL

PRODUCING REFINING MARKETING

Published Weekly by
THE PETROLEUM PUBLISHING COMPANY
114-116 West Second Street
TULSA, OKLA.



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ESTIMATES, THEORIES AND FACTS

The cracking process has done more for conservation than any legislative scheme could do under our constitution.

Something might be accomplished by removing legal obstacles to intelligent co-operation in the oil industry.

The great service the Federal Oil Board can render is to bring about an intelligent conception by the public of the facts relating to the industry, of its problems, both economic and legal, and to foster the scientific investigations upon which ultimately the conservation of our vastly important oil resources must depend.

These are the chief points in the address of Charles E. Hughes as counsel for the American Petroleum Institute before the oil board. They are familiar to readers of these columns. They were presented to the board with the logic and legal skill for which the former justice is noted.

It was characteristic of Mr. Hughes' reputation of going straight to the root of the matter that he began his argument by disposing of the controversy over estimates of our oil supply which have so much beclouded the whole discussion about conservation.

Nothing that could be said, he observed very pithily, would change the different attitudes of mind towards the estimates. The question of conservation is a severely practical one and it will not be much affected by a discussion of variation in estimates.

Whether we have a billion acres of possible oil reserve or whether our supply will be exhausted within the next half century, the real question of conservation before the board and the country relates to the use, manufacture and production. It is simply what can we do to make the best use of what oil we have?

Citing decisions by the United States Supreme Court, Mr. Hughes shows that Congress cannot constitutionally control oil production, on other than Indian lands, within a State. All plans for unit operation or otherwise, which assumes such authority in Congress, proceed, he says, from an erroneous conception of Federal power.

It is his deliberate judgment that under the constitution it is idle to attempt Federal regulation of production or to compel unified operations in production by private owners within fields subject to State jurisdiction.

But, he adds, the Federal Government has power to lessen restrictions upon combinations in interstate commerce and thus aid conservation of oil. Unified operations of oil fields, through control by a majority of individual proprietors, cannot be enforced but voluntary co-operation is possible if it were not for the anti-trust restrictions. Congress, as a policy of conservation, might consider permitting co-operation among owners of oil lands, under adequate government supervision, enabling owners to avoid wasteful competition in development and to consult economic conditions in the industry.

The constitutional right of the land owner to reduce to possession the oil or gas under his land must be considered in any scheme for state curtailment of production. He could not be compelled to subject his rights to determination by other owners.

The best that nation or state can do is to encourage or permit voluntary co-operation in regulating production within the industry itself.

Meanwhile, while we are waiting for this millennium, the industry has been doing more practically for conservation of oil than any regulatory legislation possible under the Constitution.

In the past three years the cracking processes have saved 585,000,000 barrels of crude that would have been required to produce a like amount of gasoline without the cracking processes.

Every grade of crude is now a potential source of gasoline. Fuel oil is now a competitor of crude as a base for gasoline. Cracking has doubled our potential gasoline resources.

No act of Congress could have done that. With all respect for the oil board no recommendation it can make can produce as much actual conservation as the industry has achieved through the development of these processes.

Nor have the industry's practical efforts for conservation stopped there. It is continually improving its refinery methods. It is continually seeking and securing greater efficiency in production methods. It is ever on the alert for more scientific means and more efficient equipment, for drilling deeper, for increasing recovery of oil from the sands and for the prevention of evaporation and other losses.

Where the Government has been appropriating a few thousand dollars for scientific and statistical work in relation to oil, the industry has been spending millions in research that has saved us more than a half billion barrels in the past three years.

It is agreed that there will be another 2 per cent gain in manufacturing efficiency this year, equivalent to an additional production of 650,000,000 gallons of gasoline, which will mean a saving of 44,000,000 barrels of crude.

These are facts of conservation not affected by varying estimates on our potential oil reserves.

Instead of pursuing theories of what might be the industry has stuck to its everyday job of dealing with conditions as they are and making the best of them. Its achievements are on record.

Possibly, after all is said and heard, the board may find the wisest conclusion of the whole matter in the suggestion in the original letter of President Coolidge that "the oil industry itself might be permitted to determine its own future."

DRESSER

COUPLINGS DOMINATE

Technical Questions Answered

By CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

The Question and Answer Department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation.

Those connected with the marketing departments and others interested in the utilization of petroleum products are also invited to take advantage of the new service.

as much detail as possible so as to as much detail as possible so as to assure a satisfactory answer.

ELECTRICAL CO_2 RECORDER

I shall appreciate an explanation of the electric meter which is used for recording the quantity of CO_2 in flue gas.—M. S.

This instrument is an adaptation of the millivoltmeter frequently used for measuring temperatures, etc. Advantage is taken of the fact that gases conduct heat at different rates as do solids and liquids. The conductivities of some of the common gases, as compared with air, shown in the following table illustrate this.

Thermal Conductivities With Respect to Air

Gas—	Temperature 32°F.	212°F.
Air	1.000	1.000
Carbon	.586	.690
Dioxide	.625	.760
Carbon dioxide	.958	....
Monoxide	.936	....
Hydrogen	7.340	6.94
Hydrogen	6.880	6.68
Hydrogen Sulphide	0.648	....
Methane	1.270	....
Nitrogen	1.004	.999
Oxygen	1.002	1.034
Oxygen	1.002	1.013
Sulphur dioxide	.415	....

Assume a wire to be surrounded by a gas which is contained in a chamber, the walls of which are maintained at a constant temperature. When connected to a source of constant current the temperure of the wire will rise until a point is reached where the heat supplied by the current is just balanced by the heat conducted away by the gas. By arranging conditions, all loss of heat except by conduction through the gas surrounding the wire can be rendered negligible and the temperature attained by the wire will depend mainly upon the ability of the gas which surrounds the wire to conduct heat, being lower when the gas has a high conductivity such as flue gas with low CO_2 and higher when the gas has a low conductivity such as high CO_2 flue gas. If the wire used has a high temperature coefficient of electrical resistance, this resistance will have a value corresponding to the thermal-conductivity and therefore to the composition of the surrounding gas.

By comparison of the resistance of two such wires surrounded respectively by a reference gas and the mixture of which the qualitative composition is known, the composition of the mixture can be rapidly and accurately determined after an experimental calibration has been made.

The thermal conductivity of a gas being examined is compared with a standard gas, in this case air, by means of a Wheatstone Bridge Platinum spirals are uncemented in two cells, one of which is filled with air, the other is exposed to the flue gas. A current from a storage battery divides and passes through the fine wire spirals on one side and the ratio coils on the other. If the gases surrounding the wire are alike in thermal-conductivity, conduction to the metal cell walls is equal in both cases. Consequently the spiral platinum resistances attain the same temperature and the bridge remains balanced. But since flue gas is made up of gases which differ in thermal-conductivity from air, the bridge is thrown out of balance when flue gases through one of the cells and the galvanometer G deflects according to the magnitude of the unbalancing. Since the thermal-conductivity of CO_2 differs from that of air by approximately 40 per cent, it is possible to calibrate the equipment in terms of CO_2 percentage. The other constituents of flue gas, such as carbon monoxide, methane, nitrogen and oxygen, fortunately have substantially the same conductivity as air. Since temperature of the gas affects both sides of the bridge equally, variations in thermal-conductivity due to variation of CO_2 content are the only remaining effects on the bridge balance. Consequently the galvanometer deflections may be calibrated for the quantity of CO_2 alone.

CONTACT FILTRATION

Please advise where reliable printed information concerning contact filtration may be found.—D. L. W.

The following articles will be of interest:

The Purification of Petroleum Products by the Contact Method, by J. Harris, Oil Trade, Vol. 16, No. 5, Page 25, 1925.

Adsorption Studies on Decolorization of Mineral Oils by Rogers, Grimm and Lemmon, Industrial and Engineering Chemistry, Vol. 18, No. 2, 1926.

Modern Treatment of Refined Oils, by A. E. Miller, The Oil and Gas Journal, March 4, 1926, Page 26.

Mixed Crude Available for Lub Oil, by James W. Weir. The Oil and Gas Journal, September 17, 1925, page 24.

A more extended reference to the literature of this subject, with some patent references, may be found on page 156 of this issue.

VISCOSITY AND SERVICE

Does the viscosity of a lubricating oil indicate the absolute value which may be obtained in service?—W. K. C.

This is a subject which has been under discussion for many years without a satisfactory explanation. Recent investigations have given results which seem to show that lubricating value is not indicated by the measure of viscosity.

The results of a test were reported before the Institute of Petroleum Technologists as follows:

Diesel Oils Having Similar Properties

	A	B
Flash point (closed)	408F°	410F°
Flash point (open)	430	440
Fire point	484	515
Viscosity at 60°F.	843	1060
Viscosity at 200°F.	49	54
Viscosity at 250°F.	39	42
Specific Gravity at 60°F.	0.872	0.878
Hours run	1,720	3,001
Units generated	166,308	334,810
Load factor per cent	6.4	7.4
	Gallons	Gallons
Oil per 100 hours	16.6	5.3
Oil per 1,000 hours	1.74	0.48

The oil B is probably slightly better than A, when judged by properties. These properties do not explain the great difference in performance and the quantity of oil consumed.

SOLUBILITY OF HYDROGEN SULPHIDE

To what extent is hydrogen sulphide H_2S soluble in water at various temperatures?—S. C.

The solubility of hydrogen sulphide has been determined as follows:

One Volume of Water at

0°	C or	32°F	absorbs 4.37 volumes	H_2S
15°	C or	59°F	absorbs 3.23 volumes	H_2S
25°	C or	77°F	absorbs 2.61 volumes	H_2S
40°	C or	104°F	absorbs 1.86 volumes	H_2S

VOLUME OF GAS FROM OIL

How much gas is given off at crude stills and how much at pressure stills? What fractions from the crude give the most?—W. W.

The data available have been obtained from representative Mid-Continent oils. The volume varies with the different crudes and with condensing equipment. The same may be said with respect to the different kinds of pressure stills.

From 5 to 12 feet per barrel are obtained from the first 20 per cent fraction; from a trace to 10 feet from the next 50 per cent; from 6 to 35 feet from the next 20 per cent, and the largest quantity from the last fraction, that is beyond the 90 per cent fraction when reducing to coke, which varies from 20 to 45 feet per barrel run. The total volume from crude run to coke varies from 45 to 90 feet per barrel.

The total volume from pressure stills varies from 150 to 350 feet per barrel charged.

CORROSION OF WROUGHT IRON AND STEEL

Is there any difference in the rusting of iron barrels whether composed of steel or wrought iron?—E. J.

A committee which made a special investigation of this subject reported that wrought iron was better than steel as a rust-resisting material for barrels. Material which had given poor service was found to be a mixture of wrought iron and steel. Tests with different substances and different gas mixtures in which the samples were subjected to complete immersion, to the action of a film of the reacting substance and to the action of a current of the gas with and without water, gave results from which these conclusions were drawn.

Carbon dioxide is not an essential agent for oxidation. Its presence to the extent of 2.5 per cent in a wet gas containing 1 per cent oxygen aids oxidation about 10 per cent; carbon dioxide slowly removed iron in the form of a solution; liquid water is an essential agent of corrosion. Its effect is more pronounced when present in small than in large quantities; none of the products of corrosion has a retarding effect upon further corrosion; the relative rates of corrosion are, very pure iron 100, wrought iron 150, steel 190; the chief agencies of corrosion are oxygen, water and certain compounds of ammonia; control measures include covering internal surfaces with protective coating, removing water completely from the system and freedom from oxygen.

QUALITY OF ROAD OIL—

What kind of oil gives the best results for oiling dirt roads?—M. H. S.

The most reliable information concerning the use of road oil is that of the Illinois Highway Division, which has investigated a number of different oils as used on the roads of that state. They report that the best results were obtained from oils of the pressure tar type. These were road oils obtained by reducing the liquid residues from pressure stills to the required specifications. Straightrun residues gave the next best results. Pure asphalt base oils gave poor results.

Their conclusions from the tests on six road oils were: Semiasphaltic and paraffin-base oils are superior to asphaltic-base oils for use on earth roads for the reason that they resist emulsification and retain their life much longer in contact with the soil and moisture.

Reduced pressure tar is a satisfactory oil for earth roads. Binding qualities and adhesiveness are secondary importance to the ability of the oil to resist emulsification and retain its life in contact with the soil.

Mat forming oils which develop their asphalt content by the evaporation of their lighter constituents after their application, are not well suited for earth roads.

Nonvolatile and homogeneous oils penetrate better and are more evenly and uniformly absorbed by the soil than blended products. Blended oils tend to separate or fractionate when applied.

SHOULD HYDROGEN SULPHIDE BE REMOVED BEFORE COMPRESSING?

Refinery gas and some natural gas contains hydrogen sulphide which acts on the metal. I should like to know what quantity may be present before there will be serious corrosion of the steel and valve plates and when the gas should be treated before passing through the compressor?—T. F. H.

Any quantity of hydrogen sulphide is objectionable and the extent of corrosion depends on the volume of gas handled, which is another way of saying that the action is influenced by the total quantity of hydrogen sulphide. While natural gas does not contain an appreciable quantity of oxygen, the usual refinery gas does. Hydrogen sulphide in the presence of oxygen (air) tends to form sulphuric acid which of course causes rapid corrosion. In the absence of oxygen the corrosion products are free sulphur and iron sulphide. Both of these localize the corrosion with the result that pitting proceeds at a more rapid rate than a calculation would indicate.

The National Tube Research Laboratory determined the penetration of hydrogen sulphide in the presence of water as shown in the table:

Hydrogen Sulphide Pentration of Various Metals

Metal—	Days Tested	Inches Penetration Year
Nickel	120	0.00024
Monel metal	120	0.00054
Chrom-steel	120	0.00149
Open hearth steel	120	0.00959
Bessemer steel	90	0.00833
Copper bearing steel	90	0.01114

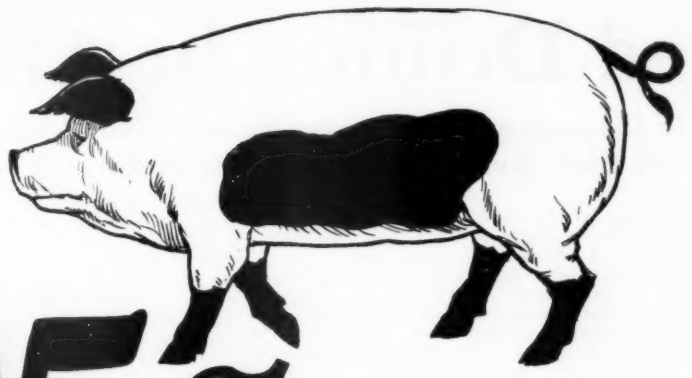
These results were obtained by bubbling hydrogen sulphide through water in which the pieces of test metal were immersed. The unit of measurement being in terms of average penetration in inches for a year, based on loss in weight of a known area, the area exposed, the weight of the metal per unit volume and the period covered by the test. Frequently hydrogen sulphide will cause pitting or perforation before appreciable quantities of the metal have been removed by corrosion due to the localized action mentioned. Where two opposite sides are exposed, as in valves and fans, the penetration will be twice that of the single exposure.

These are the principles involved; presented in an effort to indicate the nature of the general conditions.

No commercial system of treating will completely remove hydrogen sulphide from a gas, about 90-95 per cent removal is all that may be expected. Ordinary refinery gas contains from 150 to 500 grains of hydrogen spulphide per 100 feet. Some crudes from Mexico have yielded as high as 3,000 grains per 100 feet. The ordinary run of natural gas does not contain enough hydrogen sulphide to warrant treating before passing through the compressor.

Refinery gas containing 100 grains per 100 feet on a basis of 1,000,000 feet handled each 24 hours need not be treated, according to some refiners, because the treating expense is considerably more than the corrosion damage. Stoppage of the pipes, etc., due to the accumulation of the free sulphide is a serious danger, which should be controlled by frequent inspection, in addition to the direct corrosion which may occur.

XUM



25% of the pig was thrown away

During the early stages of any industry waste intrudes. When pigs were cheap the liver, the feet, the entrails, the brains—yes, 25% of the pig was dumped out—AN ABSOLUTE WASTE. But modern slaughtering methods, mindful of these losses, eventually found ways and means of converting every particle of the pig into profitable by-products—and "nothing is now lost but the squeal."

Modern oil refining methods are effecting a similar transition. OIL COKE RESIDUE, recognized as a high fuel factor, containing more heat than the finest of anthracite, can now be converted into briquettes ideally adaptable for domestic and industrial consumption. The Fernholtz Briquetting Process absorbs the waste in refineries using modern cracking processes, making it possible to increase profit up to 25c a barrel.

The information we have on this subject is of vital importance to refining engineers. Shall we send it to you?

PORTER & COMPANY
INCORPORATED
Briquetting Engineers
629 South Spring St., Los Angeles, Calif.

Fernholtz Briquetting Process

Unabated Drilling in All Fields

Fails to Discover any Disturbing Factor. Panhandle Up to 38,084 Bbls. Average. Good Wells in Several Areas

Unabated activity continues to mark operations in all the fields but so far without uncovering any disturbing factor. The Panhandle average was 38,084 bbls. from 16 wells with 300 operations in Hutchinson County alone. The water trouble has not increased. White Eagle Co.'s well, making 154 bbls. an hour, was among the notable completions of the week.

In Oklahoma Phillips Petroleum Co. got a better than 2,500-bbl. well on one of its Burbank leases purchases at the the latest Osage sale. Davenport reported a 450-bbl. well completed by the Gypsy Co. and the Skelly-Ford Pool, a 950-bbl. producer from the Wilcox sand credited to Phillips Petroleum Co. A 100,000,000-foot gas well in Hughes County was brought in by the Burke-Greis Co. The Wewoka deep sand is holding steadily at 23,000 bbls. daily.

Failure of three tests along the Caldwell-Angelina flexure in Louisiana has not discouraged operators; more than a score of tests are drilling. Urania was extended 2 miles south and is now 6 miles long and 1 mile wide at its broadest.

Eastern Fields

Greene County, Pennsylvania, Ritchie and Clay Counties in West Virginia and Holmes County, Ohio, led in development in the eastern fields. There has been a decided improvement in the number and size of wells completed in both the West Virginia and southeastern Ohio sections. The gas companies are going far afield and may uncover new oil pools.

Kentucky-Tennessee

The completion of a 192-bbl. well in the Sulphur Creek Field of Cumberland County and the finding made in the Anderson sand in a wildcat in White Bottom, the same county, were the high spots in the western Kentucky district during the week.

Central West

Better than 50-bbl. producers are reported from the Roundhead Pool, Hardin County, from Hancock County, Ohio, and from the Friendsville Pool, Wabash County, Illinois. The eight producers in the Michigan Field are holding up well.

Oklahoma

The Phillips Petroleum Co. completed a well in the Burbank Field which started flowing 150 bbls. an hour; the first gauge taken after 22 hours showed a production of 2,525 bbls. The well was on a lease purchased at the latest Osage sale.

The Davenport Field in Lincoln County had a well making 450 bbls. completed by the Gypsy company. The Phillips Petroleum Co. completed one in the Skelly Ford Pool of Lincoln County for 850 bbls. from the Wilcox sand.

The Burke-Greis Co. completed a 100,000,000-foot gasser in Hughes County. Max Westheimer's No. 1 Snyder made 1,200 bbls. of 35.5 oil, the best completion reported in southern Oklahoma for some time.

Mexico

With 26 completions, the best record for a long time, Mexican fields had 13 producers and 13 dry, total new production 93,250 bbls.

North Central Texas and Panhandle

Good wells in the Cross Cut area of Brown County, developments on the Cook ranch in Shackelford County and a promising prospect in the Nocona district in Montague County, were features of the week in north Texas outside the Panhandle where production averaged 38,084 bbls. from 126 wells, with 300 operations in Hutchinson County alone.

The White Eagle Co.'s No. 3 Smith was making 154 bbls. an hour at last report.

Southwest Texas

The Cin-Tex Petroleum Co.'s No. 6 Benavides in the Cole Field in Duval County flowed 30 bbls. an hour. Its Nos. 22 and 17 and the discovery well and No. 16 are in almost a straight line north and south and the best wells in the field. It is thought the field may be narrow but the drilling has been too limited to be definite on this point.

Activity in the new Randado Field in Jim Hogg County continues unabated and there is an increase in drilling in the Mirando district in the territory south of the Aviators Pool where the field is widening considerably.

The Texas Company's No. 2 Jennings in Zapata County was drilled to 4,169 feet where it went through a cap rock and a few inches into a sand. It came in a small gas well but will probably be drilled deeper.

Rocky Mountain Area

The Texas Company and Transcontinental Co.'s joint well in the Moffat Field of Colorado flowed 700 bbls. naturally. With this well the field's production is expected to reach 5,000 bbls. daily.

The Texas Company will test the theory of their being a possible oil pool below the gas sand in the Sand Draw Field in Fremont County, Wyoming.

In Utah interest now centers in the country south of Moab. The second well is about 800 feet deep. It is on the Shaffer Dome about 4 miles south of the discovery well. The Utah Oil & Refining Co. plans four tests in the Black Mountain Field this summer.

Gulf Coast

Advances in the Coastal crude have stimulated work. A total of 209 wells are now drilling with 63 rigs on locations. The amount of new production developed was very light despite continued drilling, the deep sand producers at Spindletop and the Nash Dome wells being the most notable contributors during May.

The Boling Dome continues to be disappointing. The rock salt area is much greater than expected and deep drilling in the original productive area has produced nothing yet.

Kansas

The failure of the Slick well and the Allison-Fitzwilliams well in the formation which produces in the Carter Fleeger well in Kingman County has deeply disappointed southern Kansas. Three other wells are drilling. Greenwood County is resuming activity after a temporary slowing down.

North Louisiana-Arkansas

Failure of tests along the Caldwell-Angelina Flexure has failed to dampen the hopes of operators. More than a score of tests are drilling.

Further extensioners in the Urania Field make the field 6 miles long, causing operators to call it the little Smackover. It is more than a mile wide at its broadest. Urania crude was cut for the third time, being now $1.15. Transportation cost and overproduction are assigned as the reason.

Ferry Lake's 1,500-bbl. completion by the Gulf Co. has stimulated interest there. Gulf Co.'s No. 17 Lane and No. 12 Tyson are to be deepened and the outcome is being eagerly expected.

New Mexico

Interest in the Farmington Field is centered around the Erdman and Hall tests on the Red Mesa structure. A theory of salt water above the Dakota will be tested.

The Sun Oil Co. is the latest of the major producers to enter southeastern New Mexico. It has secured a large block of acreage close to the Texas line. Counties to the north are also getting attention from major companies and much geological work is being done in Chaves County. Another test is being spudded by the Maljamar Corp.

Canada

International Oils has spudded an important test on its leases at the eastern end of the Lesser Slave Lake north of Edmonton. Drilling in the Peace River district to the northwest has shown an oil sand apparently corresponding to the Athabaska tar sands.

Widespread drilling continues through the northwestern fields the reports of operations being the most extensive in years.

California

California's production is about stationary but little decline below 600,000 bbls. is expected for some time as the deep zone drilling may offset natural decrease.

Two good flowing wells were completed in the northwest extension of Long Beach encouraging operations there but it is expected that with further drilling production will taper off.

Late News From the Fields

GULF COAST

HOUSTON, Tex., June 1.—Humphrey Corp.'s No. 1 Jackson, on the southwest side of the Sour Lake Pool, is flowing 1,500 bbls. at 4,109 feet. It is 38 gravity oil and extends the pool 1,500 feet. It is the first producer of this company in the coastal area.

The Humble Oil & Refining Co.'s No. 3 Sterling, in the Hull Pool, came in at 4,600 feet flowing 1,800 bbls. after a liner had been set.

Benedum & Trees are rigging No. 1 Kennedy, east of the Humble Pool, as a wildcat test. It is the first test drilled by this firm in the coastal region. Its No. 1 Wormser, in Brooks County, bailed dry at 2,680 feet and will be drilled deeper. The firm is drilling several tests in the southwest district.

The Gulf Production Co.'s No. 2 Smith, at High Island, has sanded again and is being worked over. It was heading about 500 bbls. per day. It is a freak well in that it has sanded and been worked over six or more times.

Paggi Brothers' No. 1 Jackson, Jefferson County, is rigging and the Sun Oil Co. is making geophysical tests at the juncture of Jefferson, Chambers and Galveston Counties.

SOUTHWEST TEXAS

SAN ANTONIO, Tex., June 1.—Recent completions in the Cole Field are the Killam-Alexander test, in Webb County, on Block 4 of Section 12, a 25,000,000-foot gasser; Cole Petroleum Co.'s No. 24, in Block 1, Section 15, in Webb County, a 40,000,000-foot gasser; Barkley, Meadows & Morgan's No. 2, in Block 4 of Section 10, in Duval County, a 40,000,000-foot gasser.

In the Holbien ranch area of the Henne, Winch & Fariss Field, Kitselman & St. Albans' No. 3 T. P., on Block 25 of Section 15, of the Holbien land, a 15,000,000-foot gasser.

Crown Central completed No. 9 Bruni, swabbing 400 bbls., and No. 6 "A" Bruni, swabbing 75 bbls.

Ten wells are due to be drilled in and bailed this week in the Randado Field, on Survey 291 in Jim Hogg County. Houston Gulf has four with casing set, Morgan Oil Corp., one; Black, Pearson & Hudson, two; Magnolia, one; William F. Morgan, one, and Wheelock & Collins, one.

Look For Woodbine Sand at 4,300 Feet In Cherokee County

MEXIA, Tex., May 31.—The Humphreys Corp. and Colliton's No. 2 Clapp, Jewell survey, 10 miles east of Jacksonville, Cherokee County, is drilling below 3,100 feet. As the Woodbine sand is believed to lie about 4,300 feet in depth in that part of the East Central Texas territory this test has not yet reached the interesting stage. Two miles west of No. 2 Clapp is the Humphreys Corp. and Colliton's No. 2 Ousley, which is about 1,900 feet in depth. Ten miles west of Jacksonville the Humble Oil & Refining Co.'s No. 1 Earle & Ragsdale is drilling around 500 feet. This well was started after a number of core tests had been made by the Humble company. About 10 miles south of the test on the Earle & Ragsdale land the Humble Oil & Refining Co. is drilling on the Posey farm, T. N. Jones survey, in Anderson County.

The Pure Oil Co., Gulf Production Co., The Texas Company, Sun Oil Co. and the Kirby Petroleum Co. are all playing Cherokee County and have either blocked or checkerboarded acreage, which, all told, must have cost together with that bought by the Humble Oil & Refining Co. and the Humphreys interests over $500,000.

The interesting test of the Transcontinental Oil Co. on the Rosson farm in the Nigger Creek area, west of Mexia, is drilling below 2,400 feet in hard Austin chalk.

"AL" CASTERLINE'S BUSY LIFE IS CLOSED

C. L. Casterline, widely known oil producer, nitroglycerin manufacturer, capitalist and stock farmer, of Findlay, Ohio, died Friday, May 28, at his apartments in Findlay. He was 75 years old. A general breakdown in health occurred some time ago. Mr. Casterline had known for some time that his end was near.

The Oil and Gas Journal in its column devoted to men known in oildom published a portrait and sketch of Mr. Casterline in its issue of May 27.

"Al" Casterline was a veteran nitroglycerin man. In the early days of well shooting, when the Roberts Torpedo Co. was operating under the Roberts patent of exploding nitroglycerin in oil wells, Mr. Casterline was one of that intrepid band of shooters known as "moonlighters" who shot wells in the dead of night regardless of the Roberts patent monopoly. This was in the Bradford Field, in Pennsylvania.

He made his own nitroglycerin, often using a couple of large crocks in which to mix the ingredients, doing the work back in the woods and carefully eluding the Roberts spies who watched every well due for a shot. The moonlighters, all of them highly experienced men, charged about half the Roberts Torpedo Co.'s price for shooting a well, and their services were in wide demand and they were held in high esteem, while the Roberts organization was considered a grasping monopoly. Mr. Casterline was one of the few early-day shooters who lived past middle age. Many a friend and companion of Casterline's in the same line of business was blown to atoms in his young manhood.

XUM

Cracking gas oil is as simple and easy for the Dubbs Process as coasting down hill on a paved road

A cracking process that can crack only gas oil is like a truck that can pull only a select load on a level road

If you want to make any grade with any load, in fair or foul business weather, only the Dubbs Cracking Process will do it

Beware of the business grades and curves ahead, in selecting the cracking process that will have to carry your business load to bring home your profits

Universal Oil Products Company
Owners of the Dubbs Process
310 South Michigan Ave
Chicago, Illinois

Panhandle Averaging 38,084 Barrels

Good Wells at Cross Cut, Brown County; Cook Ranch, Shackelford County, and Good Prospect in Nocona Field

By C. D. Lockwood
Staff Correspondent, North Central Texas

FORT WORTH, Tex., May 31.—Good wells in the Cross Cut district of Brown County, a couple of excellent additions to the Cook Ranch Pool in Shackelford County, an interesting producer in Montague County that gives promise of something unusual for the Nocona district when it is drilled in, and a small wildcat discovery in Archer County shared honors with the Panhandle during the past week and combined to raise the daily average output of the north central Texas territory to more than 210,000 bbls.

The Panhandle country, however, continues to dwarf all other developments, and several good wells of the gusher variety were completed there, sending the production to 38,084 bbls. last week from 126 producing wells. Water encroachment in the Hutchinson County Field is still considered a serious situation but has apparently grown no worse during the week and 41 new locations were announced in this county alone, bringing the total number of operations in Hutchinson County to more than 300, counting this week's completions.

The Panhandle production figures seem destined to keep right on mounting in the immediate future, also, as the current scout report reveals 34 wells drilling in Hutchinson County below the 2,500-foot level and 14 others fishing below that depth, while 9 additional tests were shut down below 2,500 feet, and 18 were making oil in some amount although not completed. There were also 12 wells in this county drilling between 2,000 and 2,500 feet so it is evident some extraordinary development will have to take place to keep down production if all of these wells are drilled into the pay in the natural course of events. Should the oil and gas division of the State Railroad Commission decide to exercise control over the gas flow in the Panhandle, it is claimed that many wells in the South Hutchinson Field would have to be put on the pump and this would, of course, automatically curtail production to some extent. The small operators in the field are objecting strenuously to such a course and the matter will be discussed and probably decided at a meeting to be held June 2, with E. H. Bell, chief supervisor of the oil and gas division.

The Phillips Petroleum Co. has taken over the Plains Pipe Line Co.'s 4-inch line from the field to the town of Panhandle in order to be able to fulfill its contract with the Atlantic Oil Producing Co. The company will pay 12 cents a barrel for the use of the line.

Among the week's best wells in the Panhandle was the White Eagle Oil & Refining Co.'s No. 3 Smith in Section 11, Block Y, which was swabbing 250 bbls. daily until it was shot with 360 quarts from 2,693-2,771 feet, and produced 154 bbls. an hour for the next 24 hours. The same company's No. 1 Smith was also shot with 300 quarts at 2,820-2,931 feet and gauged 400 bbls. afterward, with 2 per cent b.s. and water. Lenix & Pattison's No. 1 Smith, in the same section, was making 2,100 bbls. from lime at 2,910-95 feet, and was also making a little water and b.s., about 1¼ per cent. The Roxana Petroleum Corp. shot its No. 3 Smith in Section 14, Block Y, into a good producer with 180 quarts placed at 2,915-82 feet, the gauge for the following 24 hours being 2,740 bbls. It had been making 120 bbls. daily before the shot.

The Lucky 10 Oil Co.'s No. 1 Smith in Section 11, Block Y, has had an erratic career. It quit flowing for the second time at 2 a. m. on May 26, after gushing 440 bbls. an hour for a time, but for the week ending last Friday, it had averaged 2,750 bbls. daily.

Heywood and others' No. 1 Cockrell or Smith in Section 14, Block Y, had bad luck in large doses when the 6-inch collapsed and the rig burned down after the well produced 625 bbls. in five days with no water. J. R. Phillips' No. 2 Kingsland in Section 6, Block Y, also had hard luck when a shot of 470 quarts proved to be too much and the pipe was damaged. It flowed 455 bbls. the next 24 hours, however, through a bridge, from lime at 2,805-2,939 feet.

The Apex Oil Co.'s No. 1 Smith, Section 11, Block Y, was spraying 20 bbls. from lime at 2,880-2,935 feet and was shut down to shoot. The Canadian River Oil Co.'s No. 4 Kingsland, Section 4, Block Y, was spraying 30 bbls. from 2,831-2,934 feet and was preparing to shoot. Coble Oil Co. and Whittenburg's No. 2 J. A. Whittenburg, Section 12, Block Y, was spraying 20 bbls. an hour at 2,930-80 feet and was also getting ready for a shot.

Cockrell & McIlroy's No. 1 Smith in Section 14, Block Y, was making 70 bbls. at 2,985-95 feet and was shut down; No. 2 was drilling at 2,975 feet with a show of oil at 2,965-75 feet. The Dixon Creek Oil Co.'s No. 8 H. E. Smith and others in Section 11, Block Y, was getting ready for a shot and making 20 bbls. daily from 2,785-2,950 feet, total depth 2,996 feet; No. 14 Smith produced 860 bbls. the first 12 hours at 2,867-2,937 feet. This well is in Section 14, Block Y. The Fly-Blackburn Oil Co.'s No. 1 J. F. Weatherly in Section 19, Block Y, sprayed 70 bbls. at 2,964-3,011 feet. The Gates Oil Corp.'s No. 4 Kingsland, Section 4, Block Y, was completed for 60 bbls., flowing, after a 70-quart shot, at 2,953-3,030 feet.

The Gulf Production Co.'s No. 1-B Whittenburg, Section 89, Block 2, swabbed 55 bbls. at 3,023 feet. The Gibson Oil Corp.'s No. 1 Johnson Brothers in Section 74, Block 46, was drilling at 2,610 feet and making 30,000,000 feet of gas. Golding and J. R. Phillips have started to deepen their No. 1 Hodges, Section 1-A, Block M-26, which has been spraying 25 bbls. at 2,812-15 feet.

A. D. Morton's No. 1 Johnson Brothers. Section 5, Block Y, was shot with 40 quarts at 2,956-76 feet and completed for 700 bbls. The New Domain Oil Co.'s No. 1 Kingsland, Section 4, Block Y, was also completed for 30 bbls. the first 24 hours following a shot of 170 quarts at 2,877-2,941 feet. The Phillips Petroleum Co. and Coble Oil Co.'s No. 2 J. A. Whittenburg, Section 13, Block Y, was shot with 80 quarts at 2,895-2,935 feet and flowed 140 bbls. the first hour afterward.

The Prairie Oil & Gas Co. was cleaning out its No. 2 M. Weatherly, preparatory to shooting it. The well is making 40 bbls. daily from granite wash pay at 3,045-3,108 feet, total depth 3,122 feet. W. R. Ramsey's No. 1 Johnson in Section 3, Block I, had 300 feet of water in the hole and was making 50,000,000 feet of gas at 3,061 feet. The Roxana Petroleum Corp.'s No. 1 Lee Bivins, Section 86, Block 46, was also making 4,000,000 feet of gas at 1,690-2,350 feet. and was drilling at that depth. The same company's No. 2 Smith, Section 14, Block Y, was not shot but was completed for 1,500 bbls. naturally at 2,857-2,932 feet. It was reported last week as preparing to shoot. No. 3 Smith, however, was shot with 180 quarts at 2,915-82 feet and responded with 2,740 bbls. J. L. Smith's No. 1 H. E. Smith, produced 30 bbls. the first hour after a 100-quart shot at 2,847-2,942 feet. The Summit Oil Co.'s No. 1 Whittenburg, Section 13, Block Y, was drilling by tools at 2,989 feet, but averaged 150 bbls. daily for the week.

Here is indeed a "rara avis" for Hutchinson County at this stage of the game. The Texas Company's No. 1 E. Cooper in Section 6, Block 9, was dry and abandoned at 3,710 feet, having encountered no showings of oil.

In Gray County, Clark & Baldridge's No. 1 Merten Brothers had a show of oil and about 100,000 feet of gas at 3,070-72 feet in sandy lime and was running the 6-inch to drill in.

Cook Ranch Completions

Turning from the Panhandle for awhile to record developments in other areas, it is interesting to note that the well in the Cook Ranch Pool in Shackelford County, which was reported last week as flowing 100 bbls. an hour, actually tanked more than 2,500 bbls. the first 24 hours after the tools were taken from the hole and held up to better than 2,400 bbls. for several days. It is Roeser & Pendleton's No. B-2 in Section 85, about 8 miles northwest of Albany. The Roeser & Pendleton and Marland Oil Co.'s joint acreage yielded another good well in No. A-6, Section 85, west offset to the big gusher mentioned above. No. A-6 flowed about 1,000 bbls. initially from sand at 1,223-38 feet. The twelfth producer for the pool was added by the Humble Oil & Refining Co. in its No. 2 Cook, Section 84. This well came in for 50 bbls. in sand at 1,343-59 feet, total depth 1,360 feet, but when a packer was set and 2½-inch tubing was run, it flowed 600 bbls. daily.

Montague County Prospect

In Montague County, The Texas Company's No. 1 Maddox "B", is an interesting prospect for opening some good production. It was flowing 60 bbls. daily from 2 feet of sandy lime drilled at 2,078-80 feet, and storage was being erected late last week to drill it in. The gravity of this oil tests 32 degrees, which is high for this region. The E. H. E. Oil Co.'s No. 5 "A" R. Hinds was completed for 110 bbls. at 889-910 feet, and No. 3 "B" was rigging up rotary. The Gulf Production Co.'s No. 6 R. W. Cunningham and others swabbed 30 bbls. in 6 hours at 995 feet and was being put on the pump. The same company's No. 7 was cementing on top of sand at 956 feet with a showing of oil.

The new Archer County Pool opener referred to is the Pandem Oil Corp.'s No. 1 Thomas in the Thomas Survey, located about 1¾ miles northwest of Archer City. It swabbed 75 bbls. at 1,153-60 feet and was estimated good for about an equal amount on the pump.

In Upton County, the Dixie Oil Co.'s No. 3 Burleson was deepened 14 feet Saturday without helping the production. It swabbed 175 bbls. and no water last Thursday, 142 bbls. and no water Friday and 140 bbls. Sunday, total depth being 2,225 feet and top of pay 2,206 feet.

The Republic Production Co.'s No. 2 Baker in Section 8, Block R, had 600 feet of oil in the hole at 2,190-2,203 feet.

In Crane County, J. S. Cosden's No. 1 Connell was drilling at 3,000 feet Monday, in anhydrite.

In Sterling County, H. D. Rummell's No. 2 Clark, Section 8, Block A, G. C. & S. F. Survey, swabbed 15 to 20 bbls. of 32.5 gravity crude in 1½ hours last Friday. The top of the oil was at 270 feet and it was swabbed from 820 feet.

In Eastland County, Simon and others' No. 1 Morgan was shot in the Bend lime at 2,907-3,027 feet with 180 quarts. It made 250 bbls. of oil with 8,000,000 feet of gas but the rig burned down and boilers were being set to extinguish the fire. The showing of oil and gas which was shot extended from 2,895-3,027 feet, and there was a shale break to the bottom, 3,035 feet.

Howard County

In Howard County, the Deep Rock Oil

(Continued on Page 158)

MAGNOLIA BUYS LULING PROPERTY OF UNITED NORTH AND SOUTH, INC.

By B. D. Stevenson

SAN ANTONIO, Tex., May 31.—The United North & South, Inc., sale of whose Luling property to the Magnolia Petroleum Co. for $13,100,000, half cash and half oil, has been confirmed by the Magnolia, had taken out a little over 17,000,000 bbls. of oil from the Luling Field in the course of about three years, up to the first of April, 1926, and the value of the oil was placed at a little over $16,000,000. This is shown by the production reports made to the state comptroller and published quarterly. North & South is understood to have invested over $6,000,000 in the development of its property up to the first of January, 1925, practically all of which had been recovered through the operation of the lease.

Development of the Luling Field is quite interesting in that the drilling was directly against the advice of geologists and the discovery of the field was at a cost of seven wells and an expenditure of $1,200,000 in leases, drilling and incidentals. The seventh well, which at the time was recognized and agreed would be the last well drilled in the effort to find oil, would have been drilled farther south and would also have been a failure had not the title on the piece to the south been defective which necessitated changing to another tract farther north where the comapny drilled an edge well and brought in the field.

It was the first field producing in the Edwards lime which previously was supposed to carry nothing but water.

The sale of the property was on bids. Word was passed around to the big companies that the North & South would consider bids and the matter has been up for the past month or more and the Louisiana Refining Co., the Atlantic Refining Co. and a number of others are said to have made offers. Two years ago, at a time when conditions were not very favorable for the sale of properties of that magnitude, the company advertised the property for sale. It is claimed that the entertaining of bids is the first time known when a property of such magnitude was sold in that way.

Gets Production Above 3,000 Feet

In the transfer of the property the Magnolia gets the production above 3,000 feet which will take in all the production in the Edwards lime. Below that is retained by the North & South.

The Luling Field was discovered late in 1921 but development did not get under headway till late in 1922. The first pro-

(Continued on Page 160)

TRANSIT PUMPS

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THEY are the handiest pumps on any lease. They hook up pronto with a walking beam or a pumping jack. Ideal for pumping oil from the well to a central tank, for emptying producers' tanks into gathering lines, or for such odd jobs as pumping water for your boilers or engines. A size to fit your requirements, either plain or brass tube lined.

THERE is a Transit Pump for every conceivable purpose in field or refinery. Probably no other line of pumps in the world is made with such skill and patience, along such fundamentally correct lines.

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In Oil Field Equipment—the Most Human Organization in America

Burbank Field Well Makes 2,500 bbls.

Located on Tract Purchased at Recent Osage Sale. Well Is Making 100,000,000 Feet of Gas in Hughes County

By J. L. Dwyer
Staff Correspondent, Oklahoma Fields

The Burbank Field in Osage County stated a comeback this week offering for stellar honors a 2,500-bbl. well. The new well is the Phillips Petroleum Co.'s No. 16, NE cor. NE, Section 12-27-5, and the Burbank sand was topped at 2,936 feet. The pay was found from 2,950-83 feet, and the well started flowing at 150 bbls. an hour. The first gauge was taken after it had flowed 22 hours, and showed a production of 2,525 bbls.

The splendid showing of this well offset to some extent the disappointment caused the Phillips company by the dry hole last week in the SE cor. NE, Section 2. Both of these leases were purchased at the last Osage sale. The territory around the new well is under lease, and most of it is under development, and there will be very little added activity as a result of the find.

The Davenport Field in Lincoln County offered a good well for consideration of the readers in Gypsy Oil Co.'s No. 12 Caves, NW cor. SE NW, Section 11-14-5, which made 450 bbls. the first 24 hours from sand at 3,351-82 feet.

In the Skelly-Ford Pool of Lincoln County the Phillips Petroleum Co. also found a good well in No. 2 Kilgore, NW cor. SW, Section 8-15-6, which tapped the Wilcox sand at 4,080-81 feet and made 950 bbls. the first 24 hours.

The gas structure in Hughes County has another giant gas well to its credit in Burke-Greis Oil Co.'s No. 1 Bremer, NE cor. SW SW, Section 15-10-9. Sand in this well was found at 3,258-94 feet and the well showed 100,000,000 feet of gas when gauged. It is thought to be producing from the Lyons sand. The other huge gas well completed in this area was drilled last year by the Kingwood Oil Co. and was reported at 160,000,000 feet daily. There has been hope by operators in this section that when the tremendous gas pressure is lessened, this structure will produce oil.

The Wewoka deep sand operation is holding steadily at the 23,000-bbl. per day mark. There will probably be another well completed in this operation in about two weeks.

In Creek County the Roxana Petroleum Corp. has a good well in No. 1 Bruce, NW cor. NE, Section 16-17-9, which had sand at 2,035-56 feet and made 125 bbls. the first 12 hours.

At North Braman in Kay County, the Comar Oil Co.'s No. 7 Priboth, SW cor. NW, Section 21-29-1w, the first well to obtain Wilcox sand production in the field, is now making 1,665 bbls. The oil tests 43.5 degrees A. P. I. at a temperature of 95 degrees. It is now believed that this well passed through the Wilcox sand at 3,427 feet and entered the Siliceous lime at 3,430 feet.

The best well to be completed in southern Oklahoma for some time is Max Westheimer's No. 1 Snyder, NE cor. SW SW, Section 34-1s-3w. This well made 1,200 bbls. the first 24 hours after being shot with 60 quarts in sand at 2,400-60 feet. The oil is 35.5 degrees gravity.

In western Creek County, Burlingame & Sharp's No. 4 Peters, SW cor. NW, Section 13-19-8, made 350 bbls. from sand at 2,876-77 feet.

The Garber Field in Garfield County presented two good wells during the past week in the Sinclair Oil & Gas Co.'s No. 26-T Kisner, NE cor. NW NW, Section 19-22-3w. The Tonkawa sand was found at 2,985-3,005 feet and the well made 2,251 bbls. The other well was a deep well; Sinclair Oil & Gas Co.'s No. 31-W Walker had the sand at 4,235-47 feet. Its initial production was 1,200 bbls. for the first 24 hours, and it is now making 350 bbls.

Burbank Field, Week Ending May 28

Company—	Wells	Prod.
Lewis Oil Co.	17	862
Carter Oil Co.	282	5,598
Comar Oil Co.	7	96
Devonian Oil Co.	16	120
Mid-Co. Pet. Corp.	106	1,105
Gypsy Oil Co.	193	2,572
Kewanee O. & G. Co.	26	227
Laurel Oil & Gas Co.	16	140
Lorraine Pet. Co.	15	74
Midland Oil Co.	37	519
Mid-Kansas O. & G. Co.	42	921
Peters & Oliphant	3	568
Phillips Pet. Co.	197	10,058
Delmar Oil Co.	16	721
Phillips Pet. and Skelly	180	2,449
Prairie O. & G. Co.	127	3,124
Producers & Refiners	29	251
Roxana Pet. Corp.	34	515
Seemans et al	1	7
Simons & Moore	29	205
Sinclair Oil & Gas	144	1,369
Skelly Oil Co.	30	963
Tidal-Osage Oil Co.	42	466
The Texas Company	16	247
Twin State Oil Co.	24	331
Total	1,649	33,508
Kay County Extension of Burbank		
George Bole	3	180
Carter Oil Co.	11	854
Comar Oil Co.	17	1,019
Mid-Continent Pet. Co.	16	751
Gypsy Oil Co.	18	292
Laurel Oil & Gas Co.	5	127
Mid-Kansas Oil & Gas	10	820
Phillips Pet. Co.	32	2,115
Prairie Oil & Gas Co.	4	89
Pure Oil Co.	4	160
Roxana Pet. Corp.	8	198
Dye & Tomlinson	8	242
Skelly Oil and Phillips	20	268
Sinclair Oil & Gas	5	164
The Texas Company	16	135
Twin State Oil Co.	15	733
Total	192	8,147
Total Field	1,850	42,792
Burbank Runs		
Gulf Pipe Line Co.		5,737
Mid-Continent Pipe Line		5,780
Osage Pipe Line Co.		1,671
Oklahoma Pipe Line Co.		11,709
Prairie Pipe Line Co.		8,337
Kay County Gas Co.		3,658
Sinclair Pipe Line Co.		1,375
Moore Refining Co.		63
Empire Pipe Line Co.		1,267
Ozark Pipe Line Co.		2,876
Texas Pipe Line Co.		319

Garber Deep Sand

Daily average production of the deep sand wells in the Garber fields for the week ending May 28 was as follows, by leases:

Co. and Lease—	Wells	Oil	Wtr.
Carter Oil Co., Dively	2	115	85
Franchot, Lynds	1	145	100
Healdton O. & G., Belveal.	2	46	112
Mid-Cont. and Marland, school land	12	1,162	1,500
Prairie O. & G., Wishard	1	65	...
Roxana Pet., Schroeder	20	12,695	3,500
Roxana Pet. Corp., Wolfe	1	187	250
Sinclair O. & G., Belveal	5	263	350
Denker	2	80	20
Hartley	13	9,867	10,500
W. Kisner	6	1,259	1,500
Shaffer	1	40	2
N. Walker	20	6,182	6,000
Total	86	32,106	23,919
By Companies			
Prairie O. & G. Co.	1	65	...
Franchot	1	145	100
Carter Oil Co.	2	115	85
Healdton O. & G. Co.	2	46	112
Mid-Cont. and Marland	12	1,162	1,500
Roxana Pet. Corp.	21	12,882	3,750
Sinclair O. & G. Co.	47	17,691	18,372
Total	86	32,106	23,919

Seminole County

The Carter Oil Co. has a rig up for No. 1, SW cor. NW, Section 10-8-7.

Okmulgee County

Sheridan Oil Co. is drilling at 700 feet in No. 5, CEL SE NE, Section 4-15-11. L. C. Wheeler has the rig and tools in for No. 1 Johnson, C SW SW, Section 18-15-12. R. O. Slater's No. 5, CEL NW NE, Section 19-15-12, had sand at 1,644-99 feet and made 10 bbls. after a shot of 140 quarts. Phillips Petroleum Co. has spudded No. 2, SE cor. NE, Section 23-15-12. Crown Central Oil Co.'s No. 5, NE cor. SE NW, Section 35-14-11, had sand 2,311-40 feet and is pumping 25 bbls. T. A. Johnston Co.'s No. 5, C SW NW, Section 22-14-12, is dry at 2,032 feet. G. A. Gifford has a dry hole at 2,783 feet in No. 1, NW cor. NW, Section 34-14-12. J. A. Swindler's No. 7, C SW NE, Section 25-13-11, made 150 bbls. from sand at 2,451-62 feet. H. E. Clark and others are drilling at 2,500 feet in No. 9 Steigler, CEL SW SE, Section 22-13-12, an old well drilled deeper.

Creek County

Lima Oil & Gas Co.'s No. 2 Benjamin, NW cor. SW SW, Section 30-15-9, is rigged up. Prairie Oil & Gas Co. has a rig up for No. 2 Johnson, NW cor. NE NE, Section 1-14-7. Whitehall & Henry's No. 1, SW cor. NE SE, Section 2-14-8, had sand 2,502-39 feet and made 110 bbls. initially after a shot of 100 quarts. It is now making 40 bbls. C. G. Tibbens has built a rig for No. 11 Johnson, CWL NW SE, Section 26-14-8.

McCulloch Oil Co.'s No. 1-A, SE cor. NE SW, Section 24-15-9, is abandoned at 3,515 feet. C. G. Tibbens' No. 27, CSL SW NE, Section 30-15-9, had sand at 3,078-86 feet and made 550 bbls. Harry Newman has abandoned the location for No. 1, SE cor. NW, Section 35-14-9. Wood Oil Co. has built the rig for No. 1 Lampkin, NW cor. NE, Section 36-14-10. Producers & Refiners Corp.'s No. 3 Harjo, NW cor. NE SE, Section 18-14-10, is a new rig. Independent Oil & Gas Co. has spudded No. 1-A Bear, SW cor. NW, Section 29-14-10.

Tulsa County

Echo Oil Co. has spudded No. 5 Burzell, NE cor. NW SW, Section 7-20-13. A. A. Thompson has spudded No. 1 Bright, CSL NW SE, Section 35-19-11. Ed Brady has a dry hole at 1,345 feet in No. 1, SE cor. NW, Section 5-17-13. Newbro & Hazen's No. 1, NE cor. NW, Section 36-17-13, is dry at 1,500 feet. Cooper and others are drilling at 900 feet in No. 1 Montgomery, NW cor. NE NE, Section 36-17-13.

Osage County

Tidal-Osage Oil Co.'s No. 6, SE cor. SW, Section 24-24-8, had sand at 2,120-60 feet and is making 8 bbls. after a shot of 80 quarts. Elm Oil Co.'s No. 14, C N half NE, Section 23-22-10, had sand at 1,727-159 feet and made 20 bbls. after a shot of 85 quarts. Mid-Kansas Oil Co.'s No. 1-A, NE cor. SE, Section 10-21-10, had sand at 1,685-70 feet and made 17 bbls. Tidal Oil Co. and Norris have a dry hole at 2,136 feet in No. 4, NE cor. NE, Section 7-21-11; No. 6, CWL NW SW, Section 15-21-12, had sand at 1,894-1,946 feet and made 10 bbls. Commercial Drilling Co.'s No. 8, C SE SE, Section 16-21-12, made 40 bbls. from sand at 1,607-16 feet. Kewanee Oil Co.'s No. 5, C E half SW, Section 17-21-12, had sand at 1,354-86 feet and 1,413-15 feet and made 1 bbl. of oil and some water. Grimes & Gillespie's No. 9, CEL NE SW, Section 31-21-12, made 40 bbls. after a shot of 140 quarts in sand at 1,359-1,460 feet; No. 1, C N half SW NE, Section 3-20-11, is dry at 1,358 feet. Sand Springs Home's No. 94, CSL SE, Section 31-20-11, is dry at 2,629 feet. Savoy Oil Co.'s No. 8, NE cor. SE SW, Section 22-20-12, is dry at 2,200 feet. Winona Oil Co.'s No. 5, CSL SE NE, Section 29-20-12, had sand at 2,012-19 feet and made 25 bbls.; No. 6, NE cor. SW NE, Section 29-20-12, had sand at 2,010-16 feet, dry, and was plugged back to sand at 1,995-98 feet and made 275 bbls.

Jefferson County

A. C. Brown and others have completed No. 2, SE cor. NE NW, Section 33-6s-5w, for 72 bbls. from sand at 1,367-75 feet; No. 4, SE cor. NE NW, Section 33-6s-5w, had sand at 1,340-67 feet and pumped 147 bbls. Carter Oil Co.'s No. 2, CSL NE NE, Section 33-6s-5w, had sand at 1,316-64 feet and pumped 15 bbls. Pender Producing Co.'s No. 1, NE cor. SW, Section 25-7s-4w, is drilling at 1,250 feet.

Carter County

Humble Oil & Refining Co.'s No. 4, NE cor. SE NW, Section 19-1s-3w, has set the surface casing at 185 feet. Gilmer Oil Co. has standardized No. 3, NW cor. SW NE, Section 34-1s-3w, at 3,050 feet. Magnolia Petroleum Co. is drilling at 600 feet in No. 5, SE cor. SW, Section 34-1s-3w, and is rigging up a rotary for No. 3 Lyles, SW cor. SE, Section 34-1s-3w. Schermerhorn-Ardmore's No. 1, NW cor. SW, Section 2-2s-3w, is drilling at 1,220 feet. Humble Oil Co. has built a rotary rig for No. 1 Dingwall, SE cor. SW NE, Section 4-2s-3w; No. 1, NE cor. NE, Section 4-2s-3w, has set surface pipe at 40 feet. Wirt Franklin has built a rotary rig for No. 1 Grimes, NW cor. NE, Section 10-2s-3w; and No. 1, SW cor. SE SW, Section 15-2s-3w, had broken sands at 3,133-56 feet and flowed 120 bbls. Twin State Oil Co.'s No. 1, SE cor. SW SW, Section 15-2s-3w, had broken sand at 3,190-3,294 feet and is estimated at 25 bbls. This well has liner trouble. Sturm Drilling Co.'s No. 2, SE cor. NE NE, Section 32-2s-3w, is drilling at 400 feet.

Coline Oil Co. is drilling at 500 feet in No. 1, SE cor. SW NW, Section 6-2s-2w, and a rotary is being rigged up for No. 5 Higgins, SW cor. SE NE, Section 7-2s-2w. Iowa Oil & Refining Co. is drilling at 340 feet in No. 2, SE cor. NE SE, Section 7-2s-2w. The Carter Oil Co.'s No. 1, NW cor. SW SW, Section 7-2s-2w, had sands at 2,447-54 and 2,456-2,503 feet and made 72 bbls. on the pump. Skelly Oil Co. has built a rotory rig for No. 1 Moore, SW cor. NW, Section 17-2s-2w. Magnolia Petroleum Co. has completed No. 1, NW cor. NW, Section 22-2s-2w, for 45 bbls. in broken sand at 1,195-1,315 feet.

In the Brock Pool the Amerada Petroleum Corp. is rigging up No. 28, NW cor. SE, Section 20-5s-1.

Stephens County

Magnolia Petroleum Co. is drilling at 1,060 feet in No. 8 Beavis, SE cor. SE, Section 25-1s-9w. Independent Trust is drilling at 1,400 feet in No. 1-A, NW cor. NE, Section 26-1s-8w. The Carter Oil Co. is rigging up standard tools at 1,856 feet in No. 1, SW cor. SE, Section 28-1s-8w. Pierce & Brown have a rotary rig up for No. 4 Wilkinson, CWL NW SE, Section 27-1s-8w. Guy Brown Oil Co. has a rig on the ground for No. 4 Voss, NE cor. SW, Section 28-1s-8w. Winkler & McQueen have built a rig for No. 4 Springer, SE cor. NW, Section 28-1s-8w. Beard & Bole's No. 1, SW cor. SW, Section 30-1s-8w, had sand at 1,985-95 feet and made 25 bbls. on the pump. Lone Star Gas Co.'s No. 8, NE cor. SE NE, Section 30-1s-8w, is dry at 2,446 feet. Pace and others' No. 1, NW cor. SE, Section 2-2s-8w, is dry at 2,230 feet; No. 1-A, NE cor. SW, Section 2-2s-8w, is dry at 1,480 feet.

J. F. McCrory's No. 1-B, SE cor. NW SE, Section 19-4s-1w, had sand at 684-685 feet and made 7 bbls. Schermerhorn and others are drilling at 600 feet in No. 4 Colbert, NE cor. NW NE, Section 8-3s-2w. Winkler & McQueen's No. 1, NW cor. SE SE, Section 11-3s-6w, is dry at 2,036 feet.

Comanche County

Garvin Drilling Co. has a rotary rig up for No. 1 Linclon, SE cor. SE, Section 32-1s-10w.

Kay County

Wentz Oil Corp. has a rig up for No. 2 School Land, NW cor. SW NW, Section 16-29-1. Vernon Oil & Gas Co. has

a rig up for No. 4 Beinkholter, SE cor. SW SE, Section 17-29-1. Carter Oil Co.'s No. 1-A, NE cor. SW NW, Section 33-28-1, is dry at 4,177 feet. Grant Parkhurst has abandoned the location for No. 1, SE cor. SW, Section 3-28-3. Souligney and others' No. 1, NE cor. NW, Section 16-25-3, is dry at 3,958 feet.

Comar Oil Co.'s No. 3, NW cor. NE NW, Section 28-29-1w, had sand at 2,062-80 feet and swabbed 50 bbls. Moore Petroleum Co. has spudded No. 1, SE cor. SE, Section 4-28-2w. Comar Oil Co.'s No. 1-W, C S half SE SW, Section 5-28-1w, had sand at 2,745-90 feet and made 238 bbls.; No. 2, SE cor. NW, Section 5-28-1w, had sand at 2,350-82 feet and made 2,950 bbls.; the rig is up for No. 3 Lawrence, NE cor. SE NW, Section 5-28-1w; No. 4, SW cor. NW SE, Section 5-28-1w, had sand at 2,347-97 feet and swabbed 160 bbls. Herbert Oil Co. has skidded the rig on No. 3-W, CWL SE SW, Section 5-28-1w. Wentz Oil Co. is pulling tubing to drill deeper in No. 1 Anderson, NW cor. NE, Section 8-28-1w. Todal Oil Co. is drilling at 800 feet in No. 3, NW cor. SE, Section 8-27-1w. Marland Oil Co. is drilling at 968 feet in No. 1, NW cor. NW, Section 31-27-1w; a rotary rig is built for No. 2-A Hill, SW cor. NE, Section 1-26-2w; No. 1-A, SE cor. SW, Section 1-26-2w, was plugged back from 3,757 feet and made 563 bbls. after a shot of 120 quarts; the rig is built for No. 3-A Stober, NE cor. SW, Section 1-26-2w; a rig is built for No. 6 Hubbard, SE cor. NW, Section 12-26-2w; No. 7 North, NW cor. NE NW, Section 12-26-2w, is rigging up.

Garvin County

Magnolia Petroleum Co.'s No. 11, CWL SW NW, Section 16-1-3w, had sand at 1,620-30 feet and made 20 bbls. on the pump.

Payne County

The Josey Oil Co.'s No. 11, NE cor. SE SE, Section 35-19-5, had sand at 3,412-46 feet and made 115 bbls. naturally. Superior Oil Co. is drilling at 250 feet in No. 1, SE cor. SW SE, Section 31-18-4. Mulberry Oil Co. has built a rotary rig for No. 4 Sharum, NW cor. NE NW, Section 5-17-4. Magnolia Petroleum Co. is rigging up to deepen an old well in No. 1 Payne, C NE NE, Section 6-17-4. Roxana Petroleum Corp. has the timbers on tthe ground for No. 1 Scott, SW cor. NE NW, Section 31-17-4.

Hughes County

Phillips Petroleum Co. has a dry hole at 3,439 feet in No. 3, SW cor. NE SE, Section 27-9-9.

Seminole County

Amerada Petroleum Corp. has a rig up for No. 2 James, SW cor. NE SE, Section 24-9-6. Mid-Continent Petroleum Co. is drilling at 2,340 feet in No. 1, NE cor. SE SW, Section 24-9-6. The Carter Oil Co. is drilling at 1,500 feet in No. 1, NW cor. SW, Section 35-9-6.

Okfuskee County

Champlin Refining Co. has a rig up for No. 7 Grayson, SW cor. NW, Section 22-11-11. Lou Umburn has built a rig for No. 1 Fisher, NW cor. SW SW, Section 36-11-11. Independent Oil & Gas Co.'s' No. 14, SE cor. SW SE, Section 13-11-11, had sand at 3,792-3,822 feet and is dry and abandoned at 4,000 feet; No. 15, NE cor. SW SE, Section 13-11-11, is dry at 3,633 feet.

Muskogee County

W. R. Summerville has a rig on the ground for No. 1 Warrior, NE cor. NE, Section 17-15-17. Peterson and others' No. 2 James, CNL SE SE, Section 18-14-17, has been spudded with a machine. J. L. Slusher has a dry hole at 1,435 feet in No. 1, SE cor. NE SE, Section 21-14-17. Ozark Drilling Co. has rigged up a machine for No. 1 Smith, SW cor. SW, Section 31-15-19. M. E. Johnson's No. 1, SE cor. NW NE, Section 30-14-19, is dry and abandoned at 2,240 feet. W. D. Sneddon has a machine on the ground for No. 1 Neal, SW cor. SE SE, Section 27-13-19.

Lincoln County

Mid-Continent Petroleum Corp. has a rig on the ground for No. 1 Jackson, SW cor. Lot 8, Section 13-12-6.

Magnolia Petroleum Co.'s No. 3, SE cor. NE SE, Section 34-15-5, is abandoned at 3,510 feet, and the rig is up for No. 3 Chapman, SW cor. NW SE, Section 10-14-5; No. 1, CNL NE NW, Section 10-14-5, is dry at 3,487 feet; No. 1, NE cor. NW NW, Section 10-14-5, is dry at 3,490 feet. Shaffer Oil Co.'s No. 3, SW cor. NE NE, Section 10-14-5, had sand at 3,362-3,424 feet and made 5 bbls. oil and 20 bbls. water after a shot of 60 quarts. Magnolia Petroleum Co.'s No. 1, NE cor. NW, Section 16-14-5, is dry at 4,456 feet.

Pawnee County

Marland Oil Co. is rigging up to deepen No. 1 Moore, NW cor. SE, Section 33-20-5. George Baker has a rig up for No. 1 McGroskey, SE cor. NE, Section 3-20-6. Magnolia Petroleum Co.'s No. 2, SW cor. NE SW, Section 9-20-6, had sand at 3,045-80 feet and made 115 bbls. naturally. It was shot with 30 quarts and made 190 bbls.

Okmulgee County

West of Beggs, Getzendaner and others are drilling at 800 feet in No. 4, SE cor. NW SW, Section 29-15-11. L. C. Wheeler has a rig up for No. 1 Johnson, C SW SW, Section 18-15-12. Noble Oil & Gas Co.'s No. 2, SE cor. NE, Section 22-15-12, is abandoned at 2,687 feet. Phillips Petroleum Co. has a rig up for No. 2 Barnett, SE cor. NE, Section 23-15-12. W. E. Hammon has a gas well in No. 2, NE cor. SW NW, Section 35-15-12. Sand was at 1,891-1,901 feet and the well is shut in with 11,000,000 feet. Barbara Oil Co. has a rig on the ground for No. 4 Douglas, SW cor. NE NW, Section 35-15-12. W. J. Sherry and the Carter Oil Co.'s No. 4, SW cor. NE, Section 23-14-11, is completed for 30 bbls. after a shot of five quarts in sand at 2,781-85 feet. Kingwood Oil Co.'s No. 2, NE cor. SE NE, Section 21-14-12, is dry at 2,080 feet.

West of Bald Hill, Devonian Oil Co. and the Independent Oil & Gas Co.'s' No. 8, CSL NW SE SW, Section 7-15-13, had sand at 2,667-70 feet and made 75 bbls. after a shot of 10 quarts. Future Development Co.'s No. 1, SE cor. NE, Section 4-15-14, had sand at 1,518-48 feet and is completed for 4,000,000 feet of gas. W. B. Pine is cleaning out to drill deeper in No. 1 Sells, NW cor. NW, Section 10-15-14. Jolly Ogg and others' No. 1, NE cor. NW, Section 21-15-14, made 450 bbls. from sand at 2,276-78 feet. The Texas Company's No. 12, SE cor. NW NE, Section 21-15-14, is good for 50 bbls. from sand at 2,260-70 feet. Aggas and others' No. 4, C NE NE, Section 16-14-14, made 35 bbls. after a shot of 40 quarts in sand at 1,215-27 feet.

Denver P. & R. Co.'s' No. 7 Thomas, CNL SW NE, Section 32-13-11, is a rig. Sheldon and the Amerada Petroleum Corp. have spudded No. 2, SW cor. NW NE, Section 5-13-12. C. L. McMahon and others' No. 1, SW cor. SE SE, Section 3-12-11, had sand at 2,627-44 feet with a show of water at 2,645 feet and flowed 480 bbls.. Josey Oil Co.'s No. 2, SE cor. NE NE, Section 32-12-11, had sand at 3,670-89 feet and made 160 bbls. after a shot of eight quarts; No. 1, SE cor. SW NW, Section 33-12-11, an old well drilled deeper, is dry and abandoned at 2,935 feet; No. 10, CNL SW NW, Section 33-12-11, had sand at 2,890-,2,901 feet and made 250 bbls. Jolly Ogg and others have a machine on the ground for No. 6 Brown, CWL NW SE, Section 28-14-16. W. R. Summerville's No. 1, NW cor SE SW, Section 9-13-16, is dry at 3,065 feet. C. O. Buckles' No. 2, NE cor. SW, Section 5-11-12, had sand at 1,670-1,708 feet and made 3 bbls. after a shot of 80 quarts. M. C. French and others' No. 6, SW cor. NE NE, Section 7-11-12, had sand at 1,940-60 feet and made 25 bbls. after a shot of 80 quarts.

FAILURES IN KINGMAN COUNTY CAST DAMPER ON SOUTH KANSAS PROSPECTS

By J. L. Dwyer
Staff Correspondent, Kansas Fields

The disappointing showing of Kingman County has dealt a blow to the prospects of southern Kansas. With the Slick well, and the Allison-Fitzwilliams well both dry in the formation which produces in the Carter Fleeger well, there is nothing left but await the outcome of the three other wells drilling in this region. There should be some definite idea of the extent of this operation within three weeks.

Greenwood County which temporarily slowed up is again active and offers many completions. The daily production of this region has recently been stimulated by a program of cleaning out and shooting old producing wells. With insufficient new production to show an increase in the state's figure, the cleaning out and shooting is responsible for Kansas production maintaining its position.

Lyon County activity still increases.

Rice County

Phillips Petroleum Co. has a rig on the ground for No. 1 Welch, SW cor. SE NW, Section 35-20-6w. Prairie Oil & Gas Co.'s No. 2, SE cor. SW, Section 35-20-6w, had sand at 3,374-3,474 feet and made 50 bbls. Phillips Petroleum Co.'s No. 1, NW cor. SE, Section 2-21-6w, is drilling at 1,600 feet. Yonkers and others have a rig on the ground for No. 1 Miller, NE cor. NE, Section 3-21-6w, and No. 1 Swanson, NW cor. NE NW, Section 11-21-6w, is spudded and shut down.

Russell County

Derby Oil Co.'s No. 3, SE cor. NW SW, Section 32-11-15w, had sand at 2,837-48 feet and made 130 bbls. T. C. Johnson's No. 7, SE cor. NE NW, Section 5-12-15w, made 100 bbls. from sand at 2,808-13 feet.

Osborne County

Krueger and others have built a rig for No. 1, SW cor. NE, Section 19-8-13w. Trees Oil Co. is drilling at 1,400 feet in No. 1, NE cor. NE, Section 10-7-12w.

Cowley County

Trees Oil Co.'s No. 5, SW cor. NE NE Section 10-31-3, had sand at 3,018-24 feet and made 35 bbls. after a shot of 16 quarts. Trees Oil Co.'s No. 3 Lewis, NE cor. NW NE, Section 28-31-4, is drilling at 700 feet. Lewis Oil Co. is drilling at 1,500 feet in No. 8 Robbins, NW cor. NE SW, Section 31-30-6. Southwestern Petroleum Co. is drilling at 1,450 feet in No. 12 Eastman, SW cor. NE NE, Section 6-31-6.

In the Oxford area, T. B. Slick's No. 3-A, SW cor. SE NE, Section 19-32-3, made 50 bbls. oil and 75 bbls. water from sand at 3,417-27 feet. Marland Oil Co.'s No. 1, SW cor. NE, Section 5-33-3, is dry at 3,582 feet. Peters & Duffield have spudded No. 1 Graham, SE cor. NW NE, Section 9-33-3. Marland Oil Co. has a rig on the ground for No. 2 Lariman, SW cor. SE SW, Section 13-32-4. J. A. Hull Co.'s No. 15, NE cor. SE SE, Section 24-32-4, had sand at 2,980-3,055 feet and was shot with 10 and with 20 quarts and made 250 bbls. Little Martha Oil Co.'s No. 2, C N half SE NW, Section 24-33-6, had sand at 2,735-89 feet and made 20 bbls. of oil and a large quantity of water.

Roxana Petroleum Corp.'s No. 2, SW cor. SE, Section 16-34-3, is dry at 3,442 feet. Sidwell and others' No. 1 Day, NE cor. NW, Section 24-34-6, had sand at 2,684-90 feet and made 15 bbls. after a shot of 90 quarts. S-H-E Petroleum Co. has built the rig for No. 2 Day, SE cor. NE NW, Section 24-34-6.

Sumner County

Amerada Petroleum Co. has spudded No. 1, SW cor. SE NE, Section 18-35-1. Prairie Oil & Gas Co.'s No. 1, SW cor. NE, Section 34-34-2, had sand at 3,464-87 feet and made 30 bbls. oil and 7 bbls. water.

Wabaunsee County

White Drilling Co.'s No. 1 Young, SW cor. NE, Section 29-14-12, is dry at 2,510 feet.

Butler County

Arkansas River Gas Co.'s No. 12-A Paris, SE cor. SW, Section 20-34-4, is a rig. Phillips Petroleum Co. is drilling at 1,050 feet in No. 1 Sickles, SE cor. NE NE, Section 12-23-6. Ramsey Petroleum Co.'s No. 1, NW cor. NW, Section 14-23-7, is dry and abandoned at 3,131 feet.

Rosenthal & Core are drilling at 1,050 feet in No. 1 Enyart, C N half SW NE, Section 12-26-4. Empire Gas & Fuel Co. is drilling at 600 feet in No. 71, NW cor. SE SW, Section 17-26-5. Greenland Oil Co. and others' No. 1, SW cor. SE, Section 25-24-6, is drilling at 700 feet. Dewey Beyrs has abandoned the location for No. 1, SW cor. SE NW, Section 25-24-7. Roth & Faurot are drilling at 900 feet in No. 1, NW cor. NE, Section 13-25-8. Lassen Oil Co.'s No. 1, SW cor. SE, Section 6-25-9, had sand at 2,130-53 feet and made 30 bbls. after a shot of 40 quarts. Mid-Kansas Oil Co.'s No. 18, CSL SE, Section 19-25-9, is drilling at 550 feet; No. 8, C S half SW NW, Section 20-25-9, is drilling at 1,400 feet; No. 9, NW cor. NW, Section 20-25-9, is drilling at 1,100 feet.

Safford and others' No. 7, NE cor. SE SE, Section 26-27-4, is making 50 bbls. from sand at 2,014-2,150 feet. Sinclair Oil & Gas Co. and Empire Gas & Fuel Co.'s No. 15, NE cor. NE, Section 35-27-4, had sand at 2,550-2,604 feet and made 70 bbls. Sitrin Brothers are drilling at 2,300 feet in No. 1 Smock, NE cor. SE NW, Section 2-27-5. H. H. Patton has a rig on the ground for No. 1 Zeiset, SW cor. NW, Section 14-27-5. Neely Oil & Gas Co. has a dry hole at 2,865 feet in No. 1, SW cor. SE SW, Section 12-26-7. Connelly and others' No. 3, NW cor. SW, Section 27-26-7, is dry at 2,750 feet. White Eagle Oil Co.'s No. 5 Wilhite, NW cor. SE, Section 27-26-7, is spudded; the rig is on the ground for No. 6 Wilhite, SW cor. NW SE, Section 27-26-7. Empire Gas & Fuel Co.'s No. 2, SW cor. SE NW, Section 27-26-7, had sand at 2,140-52 feet and pumped 230 bbls. No. 4 Young, SE cor. NW, Section 27-26-7, is spudded. B. F. Branson's No. 1, CEL SE NE, Section 5-27-6, is dry at 3,215 feet. Kismet Oil Co. has a rig up for No. 1 Dixon, SW cor. SE NE, Section 11-27-6. Patton and others have a rig on the ground for No. 1 Shriver, NW cor. SW, Section 33-27-6. Magnolia Petroleum Co. has built the rig for No. 1 Smyra, SE cor. SW, Section 34-27-6. Mid-Kansas Oil Co. has a rig on the ground for No. 2 Harris, SE cor. NE, Section 22-27-7. Sinclair Oil & Gas Co. has a rig on the ground for No. 5 Barnhill, SE cor. NE SE, Section 22-27-7. The Texas Company's No. 3, SW cor. SE SW, Section 22-27-7, is dry at 2,773 feet. Flack and others have a rig on the ground for No. 1 Barnhill, NW cor. SW, Section 23-27-7.

Greenwood County

Phillips Petroleum Co.'s No. 2 Hughes, SW cor. NW NW, Section 15-22-9, is rigging up. Manhattan Oil Co.'s No. 8, SW cor. NW, Section 25-23-8, is dry at 2,640 feet; No. 14, NW cor. SE NE, Section 25-23-8, is drilling at 900 feet; No. 24, SE cor. NE SE, Section 10-23-9, is drilling at 600 feet. Phillips Petroleum Co. is drilling at 2,100 feet in No. 6, SE cor. SW SW, Section 15-23-9. O. V. Paul and others have rigged up No. 1 Morris, SW cor. SE SE, Section 18-23-9. White Eagle Oil Co. has a rig on the ground for No. 8 Norman, SW cor. NE SE, Section 19-23-9. Dingee, Pryor & Lockhard's No. 1, NE cor. NW, Section 14-22-9, is dry at 2,530 feet. Day and others' No. 1, SE cor. SW SW, Section 1-22-10, is making 235 bbls. from sand at 1,966-2,037 feet. Syndicate Oil Co. has spudded No. 1, NE cor. SW SW, Section 1-22-10; the rig is up for No. 1 Braden, SE cor. SW SE, Section 2-22-10. Empire Gas & Fuel Co.'s No. 6, NE cor. SE NW, Section 6-22-10, had sand at 2,193-2,257 feet and made 240 bbls. after a shot of 140 quarts; No. 7, NW cor. SE NW, Section 6-22-10, is drilling at 1,350 feet; the rig is up for No. 8 Atyeo, SE cor. NW, Section 6-22-10. Kansas Oil Co.'s No. 3, NW cor. SW NE, Section 6-22-10, made 175 bbls. after a shot of 120 quarts in sand at 2,271-2,312 feet. Mississippi Valley Oil

(Continued on Page 130)

Urania Field, La., Extended Two Miles

Failure of Tests Along Caldwell-Angelina Flexure Fails to Dampen Ardor of Operators. Caddo Parish Active

By James H. Dameron
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., May 29.—Extension of Urania production 2 miles southwest, an unexpected cut in Urania crude, failures of wildcat tests along the Caldwell-Angelina flexure, Caddo Parish deep tests and production increases, featured the north Louisiana district during the week while nothing radical occurred to disturb the serenity of affairs in south Arkansas.

The Urania extensioner was Montague Oil Co.'s No. 1 Zenoria Lumber Co., NW cor. NW, Section 11-9-1e, LaSalle Parish. It has been completed at 1,505 feet flowing 300 bbls. of fluid, 60 per cent of which is salt water. However, it is believed the water intrusion could have been prevented and a much better well completed and different methods been employed in the completion of the test.

Regardless of the salt water the wildcat has created a new interest in that sector and lease trading was reported to be brisk.

The test was drilled in the first part of the week. When the cement plug was drilled out at 1,488 feet sand was topped at 1,495 feet and penetrated 3 feet. When the tools were being pulled out the well blew in and with the first head oil was sent about 6 feet above the rig floor. The second sent fluid to the top of the derrick.

No liner had been set in the hole and the well looked good for a 150-bbl. producer. The oil was clean pipeline oil, testing 21.3 gravity, the same as that in the rest of the field. The well flowed three hours and then sanded up. Saturday the liner was set and the hole cleaned out and the well came back making 300 bbls. of fluid. But in the meantime the well had drilled itself 7 feet deeper and into salt water. Operators are of the opinion had screen been set with back pressure valves in the first 3 feet of said the well would have been completed into a better producer.

Production Extended

A. E. Hudson's No. 2 Urania, Section 7-10-2e, extended production one-quarter of a mile northwest when it was completed at 1,518 feet for a 200-bbl. well. The two extensioners last week make the Urania Field 6 miles long running in a southwesterly and northeastern direction and have caused several operators to call it the little Smackover. It is better than a mile wide at its widest point in production.

Reasons for Urania Cuts

Urania got its third crude slash since prices have been posted there by the Louisiana Oil & Refining Corp., and a 15-cent cut on May 26 brought the price down to $1.15 per barrel. When the field's production was around 900 bbls. January 28, the Louisiana posted a price of $1.50 a barrel. Since then three cuts have been made, two 10-cent cuts and the 15-cent cut.

The transportation cost in taking the oil from the field, and overproduction in the face of sluggish demand, brought about the reduction. The oil contains little gasoline content but is valuable for lubricating purposes. It compares with the coastal grade crude. The production of the field has leaped about 19,000 bbls. since the Louisiana company started posting prices there. The oil has to be shipped from Urania in tank cars and it is sold to the Standard Oil Co. of Louisiana and delivered to the Standard's Baton Rouge refinery.

On the heels of the price cut Urania witnessed the completion of two wells with a combined production of 5,000 bbls. Each time crude has been cut in that field big wells have been brought in following the announcement of crude cuts.

Wildcat Failures

The first two wildcat tests of the Humble Oil & Refining Co.'s play along the Caldwell-Angelina flexure were failures, as was one of the many other tests hunting production in that area. The first failure was Humble's No. 1 L. & A., Section 34-10-1w, Winn Parish, which hit the ocean at 1,517 feet. In Grant Parish, Humble's No. 3 L. & A., Section 3-9-2w, cored salt water sand at 1,715 feet and was abandoned. The third failure was in Sabine Parish, when Toro Petroleum Co.'s No. 2 Drake, Section 24-4-12, was a failure at 1,601 feet.

The trio of failures has in no way dampened the ardor of operators of the wildcat tests along the flexure. More than a score of tests are drilling and when the wildcat campaign for that area is completed it will be the biggest ever staged in the Louisiana-Arkansas district.

Ferry Lake Looks Better

The completion last week of the Gulf Refining Co.'s No. 232 Ferry Lake, into a 1,500-bbl. well has enlivened drilling in that immediate section. Several new locations were made last week by the Gulf Company. The big interest in Caddo is focused on the deep tests. Gulf's No. 17 Lane, Section 13-21-15, is to be completed at 3,782 feet. It is making 15 bbls. of oil, 5,000,000 feet of gas and 500 bbls. of salt water from hard blue shale streaked with lime. Gulf is arranging to lubricate and deepen No. 12 Tyson, Section 14-21-15, which is now making 41,000,000 feet of gas.

In the Arkansas Field

The only wildcat in Arkansas creating any interest is the Crestline Oil Co.'s No. 1 Telford, Section 34-17-15, just outside the city limits of El Dorado, and it apparently will be a duster in sand at 2,212-18 feet.

In the Lisbon area, 10 new wells gave that field 1,099 bbls. of new production. The field has been fairly well defined and the new wells now are away from the heart of the field and not the big initial producers that made Section 9 the rosy spot. The interest of operators there is riveted on the H. L. Hunt Murphy test in the north end.

Hunt's test bailed dry at 2,120 feet and a shot was put in the hole. Nothing resulted and it is believed it was put off too far up in the hole to do any good. The test is about one-half mile due north of production in Section 4-17-16.

Sixteen new operations were reported in Union County last week and at the close of the week Union County had 76 wells drilling, 10 waiting on standard rigs, 24 derricks standing and 10 rigging up. In both States, 45 first reports were made, Louisiana leading with 23 and 12 of that number in LaSalle Parish.

For the closing week 33 completions were recorded in both States, 38 wells waiting for standard rigs, 253 tests drilling, 29 rigs, 74 derricks standing and 17 locations in the field.

Only the sharp increase in production in Louisiana saved the district from recording a loss over the previous week. Arkansas lost 4,300 bbls., while Louisiana gained 5,000 bbls. and kept the district's production climbing.

Every field in Arkansas lost. Smackover heavy fell off almost 1,000 bbls. and so did Lisbon when new production failed to offset the loss brought about by steady declining wells. In Louisiana, Urania as usual led the parade and almost reached the 20,000-bbl. mark. Caddo gained 1,000 bbls., while Homer took a 2,000-bbl. slide. Bellevue, Cotton Valley and Elm Grove were the other fields in the State to slump.

PRODUCTION BY FIELDS

Louisiana	
Bellevue	2,390
Caddo, light	10,635
Caddo, heavy	3,190
Cotton Valley	8,820
DeSoto and Red River	4,105
Elm Grove	610
Haynesville	10,165
Homer	5,765
Urania	19,440
Total	65,120
Arkansas	
Smackover, heavy	134,205
Smackover, light	17,210
El Dorado	7,520
Lisbon	10,365
Nevada	3,080
Stephens	1,920
Total	174,300
Total both fields	239,420
Total last week	238,825
Difference	595

Big Wells at Urania

Another of the idiosyncrasies of the Urania Field is its peculiarity of bringing in gusher type producers in the face of slashes in crude prices brought about by the field's overproduction. Overproduction brought about a 15-cent drop in prices in that field last week and at the same time two new wells with a combined production of 5,000 bbls. were completed in addition to the boost in daily average production caused when old wells came back with a rush after sanding up. In each of the crude cuts in Urania this year big wells have been completed in the same week. The biggest well last week was brought in by the Hope Oil Co. at its No. 1 Urania, Section 19-10-2e, which was formerly Alexander Oil Co.'s No. 3 Urania. The well is flowing 3,000 bbls. of oil daliy from 6 feet of sand topped at 1,549 feet. The second largest was Cleve Love and associates' No. 3 Zimmerman, Section 25-10-1e, which is flowing 2,000 bbls. of oil daily from sand at 1,535-38 feet.

The locations for five tests on the J. S. Abercrombie & Co.'s M. M. King lease, Section 25-10-1e, were abandoned. They are No. 8, No. 10, No. 11, No. 12 and No. 13. A. E. Hudson's No. 3 Urania, Section 7-10-2e, was finished in 9 feet of sand topped at 1,509 feet for a 200-bbl. well. Louisiana Oil & Refining Corp.'s No. 6-A Tremont, Section 35-10-1e, is flowing 80 bbls. daily from sand at 1,540-44 feet. Natural Gas & Fuel Corp.'s No. 2-E Urania, Section 18-10-2e, was dry and abandoned at 1,561 feet. Standard Oil Co. abandoned location for No. 8 Urania, Section 13-10-1e. Williams Drilling Co.'s No. 6 Herbert, Section 26-10-1e, is making 60 bbls. on the pump from sand at 1,529-38 feet. Yeary & Bristol's No. 2 Urania, Section 8-10-2e, is flowing 200 bbls. from 1,522-26 feet.

Urania First Reports

A dozen first reports bolstered field operations in Urania last week to check the decline. Abercrombie & Co.'s No. 7 M. M. King, 660 feet west and 150 feet south NE SE SW, Section 25-10-1e, is coring at 1,495 feet. Arizola Petroleum Co.'s No. 6 Tannehill, Section 36-10-1e, is standing with a hole full of oil from sand at 1,447-50 feet and waiting for a standard rig. Six-inch was cemented at 1,498 feet at Arizola's No. 7 Tannehill and No. 8 is being rigged up. Bailey and associates' No. 1 Holmes, Section 26-10-1e, had the sand at 1,521-27 feet and is waiting for a standard rig. Six-inch casing was cemented at 1,507 feet at Carter & Hurley's No. 1-B Urania, Section 7-10-2e, formerly reported as Porter & Hurley's No. 1-B Urania.

Cherokee Petroleum Co.'s No. 2 Louisiana Central, Section 19-11-3e, is drilling at 775 feet. O. W. Clark's No. 2 Bass, Section 25-10-1e, is waiting for a standard rig and is in sand at 1,541-45 feet. Surface casing was set at 103 feet at Cox and associates' No. 2 Herbert, Section 26-10-1e, and the test is shut down at 500 feet. Degman & Youngblood's No. 1 Hardtner-Tannehill, Section 8-10-2e, is shut down at 1,536 feet for orders. Six-inch casing was cemented at 1,513 feet at Hardtner Oil Co.'s No. 4 Urania, Section 8-10-2e, and a derrick is up for No. 5 Urania, 200 feet north and west, SE SE SE, Section 7-10-2e. H. L. Hunt's No. 10 Tullos heirs, Section 26-10-1e, is in sand at 1,488-92 feet and waiting for a standard rig. A rig is up for Hunt, McCurry & Zoder's No. 2 Urania, 150 feet south and west, NE NW SE, Section 7-10-2e. Keene & Wolf's No. 4 Urania, Section 19-10-2e, is drilling at 1,200 feet.

Six-inch casing was cemented at 1,530 feet at Louisiana Oil & Refining Corp.'s No. 1-B Tremont, Section 30-10-2e; No. 32-B Tremont, Section 25-10-1e, is drilling at 750 feet. Louisiana's No. 7-A Tremont, Section 4-9-2e, is drilling at 300 feet. Little River Oil Co.'s No. 1 Ratcliff, Section 26-10-1e, had the sand at 1,555-59 feet and is waiting for a standard rig. Montague Oil Co.'s southern extensioner of the field, No. 1 Zenoria Lumber Co., Section 11-9-1e, running the liner and is in sand at 1,495-98 feet. On the Natural Gas & Fuel Corp.'s "B" Urania lease No. 6 is waiting for the 6-inch casing to set at 1,506 feet; casing was set at 1,508 feet at No. 5 and at 1,511 feet at No. 7. No. 8-B, 420 feet north and 325 feet west, SE NE, Section 18-10-2e, is drilling at 750 feet; No. 9-B, 300 feet north and east, SW SE NE, is drilling at 500 feet. Same operators have derricks up for No. 3-E, 220 feet east and 175 feet north, SW NE, Section 18-10-2e, and No. 4-E, 250 feet north and west, SE SW NE, same section. Same company has a derrick up for No. 1 Cockerhan, 220 feet south and east, NW SW, Section 36-10-1e.

Ohio Oil Co.'s No. 8 Urania, Section 16-10-1e, is in 4 feet of sand topped at 1,508 feet and is waiting for a standard rig. L. E. Ozley's No. 2 fee, Section 26-10-1e, is waiting for a standard rig and had the sand at 1,532-40 feet. A derrick is up for Robinson & Long's No. 1 Louisiana Central, 150 feet south and east NW NE SW, Section 6-10-2e. Surface casing was cemented at 101 feet at Sherman and associates' No. 4 Russell, Section 25-10-1e, and at 102 feet at Shreveport Oil Corp.'s No. 1 Urania, Section 8-10-2e. H. R. Smith's No. 1 Hardtner, Section 22-10-2e, is being cored at 1,600 feet. Sterling, Inc., No. 2 Winberry, Section 18-10-2e, had the sand at 1,510-13 feet and is waiting for a standard rig. O. F. Whittaker's No. 4 King, 150 feet north and 630 feet east, SW S half NE NW, Section 36-10-1e, is drilling at 400 feet.

Bossier Parish

In the Bellevue Field, Autrey and associates' No. 1-C Smith, Section 23-19-11, was completed at 417 feet making 500,000 feet of wet gas. Six-inch casing was set at 352 feet at R. L. Crook's No. 4 Larkin, Section 14-19-11.

In the Bossier Parish wildcat territory, Arkansas Fuel Oil Co.'s No. 1 Murray, Section 14-23-14, is shut down at 3,466 feet. Doern and associates' No. 1 Bollinger, Section 9-22-11, is drilling at 1,065 feet. No-Bo Fuel Syndicate's No. 1 Weaver & Rivers, Section 13-20-12, is shut down waiting for orders at 420 feet. Woodley & Collins' No. 1 L. & A. Oil Co., Section 14-23-12, went out of the chalk rock at 2,566 feet and a core is being taken at 2,567 feet.

Caddo Parish

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WIGGINS ROOF

OGJ6-3Gray

Section 7-20-15, was completed at 1,610 feet for a 4-bbl. pumper; Dixie Oil Co.'s No. 6 Worley, Section 23-22-15, is pumping 13 bbls. daily from sand at 1,032 feet.

Dixie Oil Co.'s deep test, No. 1 Jolly, Section 27-22-15, is drilling in lime and shale at 4,068 feet; Dixie's No. 16 Muslow, Section 7-20-15, is drilling at 2,140 feet and 6-inch casing was cemented at 3,614 feet at No. 71 Robertshaw, Section 14-21-15. Gilliam Syndicate's No. 1 Sellington, Section 17-21-14, was plugged back to 907 feet and is waiting for a standard rig. Galloway and associates' No. 1 Burglass, Section 15-21-16, is drilling at 990 feet. The surface casing was cemented at 354 feet at Gulf Refining Co.'s No. 1 Byrd, Section 2-19-14. On the Gulf's Ferry Lake lease No. 232, Section 16-20-16, is drilling at 2,251 feet; 6-inch casing was cemented at 2,145 feet at No. 234, Section 15-20-16, and No. 235, same section, is drilling at 1,008 feet. Ten-inch was set at 138 feet and at No. 236, Section 16-20-16, and No. 237, same section, is drilling in chalk rock at 1,430 feet. No. 238, Section 21-20-16, is a rig; a derrick is being built for No. 239, Section 22-20-16, and locations have been made for No. 240, 2,340 feet east and 300 feet north, SW cor. Section 15-20-16; No. 241, 850 feet east and 900 feet north, SW cor. Section 15, and No. 242, 3,400 feet north and 300 feet west, SE cor. Section 16-20-16.

Gulf's No. 1-E Muslow, Section 35-21-15, is drilling through gray lime and shale at 3,658 feet. Arrangements are being made to deepen Gulf's No. 12 Tyson, Section 14-21-15, which is making 41,000,000 feet of dry gas from broken lime and shell at 3,746 feet. Lewis Oil Corp.'s No. 14 D. H. Raines, Section 22-21-15, is waiting for a standard rig at 1,620 feet, and a rig is up for No. 15 D. H. Raines, 150 feet north and west, SE NE, Section 22-21-15. Twelve and one-half inch casing was cemented at 202 feet at Magnolia's No. 16 Dillon, Section 24-21-15, and the test is drilling ahead at 830 feet. Magnolia's No. 17 Dillon, same section, is drilling at 1,158 feet, and No. 1 Spell, Section 29-21-15, is drilling in hard lime at 3,028 feet. Magnolia's No. 1 Wiley Bradford, Section 24-21-15, is drilling in lime at 3,571 feet. Magnolia's No. 22 Raines, Section 22-21-15, is being bailed to test chalk rock at 1,665 feet. Ohio Oil Co.'s No. 1 J. S. Ardis, Section 1-21-15, is drilling in lime and shale at 4,554 feet. Ohio's No. 18 E. K. Smith, Section 12-21-15, is being plugged back from 3,973 feet to 3,795 feet and completed as a gas well.

Oil City Oil Co.'s No. 2 Satterwhite, Section 10-20-16, found only a light showing of oil at 2,304 feet and arrangements are being made to abandon. Page & Caldwell's No. 1 Hobbs, Section 29-21-15, is drilling below the 2,185-foot level. S. L. Ricketts' No. 12 L. B. Caddo, Section 23-22-15, is waiting for a standard rig at 1,076 feet. Standard Oil Co.'s No. 1 Bettie S. Youree, Section 13-20-15, is drilling in shale and lime at 1,780 feet. D. C. Richardson's No. 13 Youree-Randolph, Section 13-20-15, has been deepened 3 feet from the top of the sand at 2,246 feet and swabbed down 900 feet.

It was permitted to set a while and swabbed again and appeared to be making about 80 per cent oil and 20 per cent salt water, in the opinion of scouts. Six-inch casing was cemented at 3,660 feet at The Texas Company's No. 42 C. M. L. Co., Section 23-21-15, and 8-inch casing was set at 2,694 feet at No. 47 C. M. L. Co., same section. Six-inch casing is being cemented at 2,166 feet at The Texas Company's No. 2-B Jeems Bayou, Section 16-20-16. Same company's No. 52 S. P. Harrell, Section 12-21-16, is drilling in packed sand and gumbo at 1,975 feet and location was made 660 feet south and west, NE cor SE, Section 2-21-16, for No. 53. A rig is up for The Texas Company's No. 7 Herold, Section 14-21-15, and No. 4 Mason fee, Section 33-21-16, is waiting for a standard rig at 1,869 feet. The Texas Company's No. 18 D. H. Raines, Section 15-21-15, is drilling through gas rock at 1,240 feet. Tholl Oil Co.'s No. 8 Huckaby, Section 14-21-15, has 900 feet of oil in the hole from sand at 1,610 feet and is waiting for a standard rig. Eight and one-quarter inch casing was cemented at 1,554 feet at Woodley Petroleum Co.'s No. 2 Knight, Section 35-16-12.

Claiborne Parish

Brown and associates' No. 1 Beard, Section 28-19-5, is drilling through shale at 1,400 feet. Gilliland Oil Co. and W. R. Ramsey's No. 1-D Taylor, Section 14-23-8, is waiting for the 8¼-inch casing to set at 3,106 feet. Triangle Drilling Co.'s No. 1 Hollayfield, Section 32-23-5, is drilling below the 2,200-foot level. Same company's No. 1 Keen, Section 7-19-5, is fighting a cavy hole and trying to get to the bottom at 4,117 feet.

DeSoto Parish

Six and five-eighths inch casing is being underreamed to 3,725 feet at Dixie Oil Co.'s No. 1 Jenkins, Section 9-12-11, and the total depth of the hole is 3,805 feet. J. P. Evan's No. 1 L. L. & D. Co., Section 15-12-14, is drilling in hard chalk at 1,959 feet and his No. 1 Sutherlin, Section 20-12-14, is coring at 2,646 feet. Magnolia's No. 1 Bond, Section 27-12-11, is drilling in gumbo at 2,906 feet. Ohio Oil Co.'s No. 1 Cody, Section 34-12-16, is drilling at 2,690 feet, corrected depth. A. H. Tarver's No. 4 Matthews, Section 29-12-11, is drilling below the 100-foot level. L. V. Ulrey's No. 1 Heard, Section 18-12-12, tested salt water with a showing of oil at 2,666 feet and arrangements are being made to abandon. J. C. Walton's No. 1 Chaffraix, Section 36-12-11, is drilling below the 1,050-foot level.

Grant Parish

Surface casing was set at 108 feet at Bradley & Cozart's No. 1 Holmes, Section 16-9-1e, and the test was drilled to 300 feet where it is shut down. Finn and associates' No. 5 Ball & Cody, Section 13-8-1w, is shut down at 2,110 feet and Finn & Hurdley's No. 1 Ball, Section 32-7-1w, is coring at 1,600 feet. Gulf Refining Co.'s No. 1 Swope, Section 18-9-1e, is drilling in sandy lime a' 1,683 feet. Humble Oil & Refining Co.'s No. 2 L. & A. is shut down at 800 feet for water; N. 3 L. & A., Section 3-9-2w, is drilling at 1,424 feet. Humble has staked location for three other tests in that area. No. 4 L. & A., 1,520 feet west and 330 feet south NE cor. Section 6-9-1w; No. 5 L. & A., 950 feet south and 1,600 feet east NW cor. Section 16-9-1w, and No. 6 L. & A., 990 feet west and 330 feet south NE cor. Section 8-9-1w.

Ouachita Parish

Central company's No. 1 Kerr, Section 12-9-4, is a rig. J. M. Huber's No. 2 Edwards, Section 1-18-4e, tested 1,000,000 feet of gas at 2,228 feet and arrangements are being made to deepen. Sam D. Hunter's No. 1 D'Arbone, Section 32-19-3e, showed a big batch of salt water at 2,215 feet along with a little gas. Six-inch casing was cemented at 2,175 feet at G. E. Jordan's No. 1 Ouachita, Section 17-18-4e. Maury Drilling Co.'s No. 3 McErwin, Section 20-19-4e, is drilling at 1,200 feet. Palmer Corp.'s No. 1 Milsap, Section 36-20-4e, is drilling at 1,538 feet. United Carbon Co.'s No. 2 Wilson, Section 24-20-4e, is drilling at 1,400 feet. Southern Carbon Co.'s No. 48 fee, Section 35-19-4e, is drilling at 2,167 feet.

Sabine Parish

Toro Petroleum Co.'s No. 2 Drake, Section 24-4-12, was a failure at 1,601 feet and was abandoned. L. M. Emlet's No. 5 H. L. Bowman, Section 9-7-12, is coring hard lime at 3,747 feet. Emlet's No. 7 H. L. Bowman, Section 14-7-14, is drilling at 1,250 feet. J. B. Greer's No. 1 Peavy-Wilson, Section 24-5-9w, is drilling at 150 feet and a derrick is up for Greer's No. 2 Peavy-Wilson, Section 11-5-9w.

Union Parish

Arkansas Fuel Oil Co.'s No. 1 James Reeves, Section 14-20-1e, is drilling in sandy shale at 3,427 feet. Southern Carbon Co.'s No. 4 Grayling, Section 28-21-4e, is drilling at 725 feet after the 12½-inch had been set at 188 feet.

Webster Parish

Alabama Petroleum Co.'s No. 4-B Robbins, Section 21-21-10, is drilling through chalk rock at 2,335 feet. The bit is being sidetracked at 4,281 feet at Magnolia Petroleum Co.'s No. 1 Bible, Section 8-20-9. Ten-inch casing was cemented at 355 feet at Magnolia's No. 2 Turner, Section 21-21-10. Ohio Oil Co.'s No. 1 W. Cox, Section 23-21-10, is almost a mile deep and it is in shale at 5,227 feet drilling ahead. Ohio's No. 3 Holloway, Section 23-21-10, is drilling in hard sand at 3,228 feet. Smitherman & McDonald's No. 1 Oakley, Section 29-33-11, is drilling in sand and shale at 4,026 feet. Southern Crude Oil Purchasing Co. and Ramsey's No. 1 Munn, Section 1-22-10, is drilling in lime at 3,010 feet.

Winn Parish

The first of the Humble Oil & Refining Co.'s wildcat tests along the Caldwell-Angelina flexure was a failure. Its No. 1 L. & A., Section 34-10-1w, had a hole full of water at 1,517 feet and was abandoned. Humble's No. 1-B Edenborn, Section 1-9-3w, is drilling at 1,300 feet. Humble's No. 7 L. & A., 1,650 feet west and 330 feet north SE cor. Section 12-9-3w, is being rigged up. Hunt and associates' No. 1 Edenborn, Section 8-9-3w, is being rigged. Keene & Woolf's No. 1 Radescich, Section 21-12-3w, is drilling at 250 feet.

Scattered Wildcats

In Caldwell Parish, Cherokee Petroleum Co.'s No. 1 Louisiana Central is drilling at 950 feet. Six-inch casing was set at 1,656 feet at Daniels' No. 1 Lively, Section 6-12-4e, and the test is in sand to 61 feet and apparently dry. In Jackson Parish, El Dorado Chief Oil Co.'s No. 1 Rodgers, Section 8-14-3w, is drilling at 600 feet. In Lincoln Parish, Arkansas Fuel Oil Co.'s No. 1 Cooper, NE cor. Section 3-20-4w, is a derrick. Buckley & Palmers' No. 1 Davis, Section 12-20-3w, is shut down at 2,075 feet. Boisseau and associates' No. 1 Sullivan, Section 11-21-17e, is being cored at 2,545 feet. The drilling stem stuck at 3,150 feet at Natural Gas Producing Co.'s No. 18 Crossett, Section 27-23-5e, in Morehouse Parish. In Natchitoches Parish, Forrest's No. 1 Ayres, Section 3-13-7, is a rig. J. F. Palmer's No. 1 Edenborn, Section 4-11-6, is drilling at 930 feet.

Lisbon Slumps Again

Arkansas' highest gravity oil field, Lisbon, slumped off again in new production and completions and the biggest wells of the 10 completed were two 250-bbl. producers. One of those was the Magnolia Petroleum Co.'s No. 8 Dumas, Section 9-17-16, which is flowing 250 bbls. from 30 feet of sand topped at 2,062 feet and the other is Wingfield and associates' No. 9-A Dumas, Section 9-17-16, which is making a similar amount of oil from sand at 2,084 to 2,108 feet. The smallest was Simms Oil Co.'s No. 1 Kilgoe, Section 4-17-16, which is flowing 6 bbls. daily from sand at 2,160-85 feet.

Humble Oil & Refining Co.'s No. 2-A Slaughter, Section 9-17-16, is making 75 bbls. on the pump from sand at 2,097 to 2,111 feet. Marine Oil Co.'s No. 2 Graham, Section 16-17-16, is pumping 30 bbls. daily from sand at 2,081 to 2,108 feet. Miller & Cottingham's No. 5 Slaughter, Section 9-17-16, is pumping 70 bbls. from 2,093 to 2,125 feet. Roxana Petroleum Corp.'s No. 1 Dumas, Section 9-17-16, is good for 33 bbls. on the pump at 2,098 to 2,133 feet, and its No. 4 Flournoy, Section 4-17-16, is making 150 bbls. naturally from sand at 2,090 to 2,124 feet. Wingfield and associates completed two other wells in Lisbon, No. 10-A Dumas, Section 9-17-16, for a 200-bbl. well at 2,062-98 feet and No. 9 Slaughter, same section, for a 35-bbl. pumper at 2,073 to 2,102 feet.

In the north end of the pool, Allday Drilling Co.'s No. 1 Murphy, Section 4-17-16, is waiting for the 6-inch to set at 2,100 feet. In the south end, Atlantic Oil Producing Co.'s No. 3-B Andress, Section 16-17-16, is in sand at 2,124-47 feet waiting for a standard rig with 1,000 feet of oil in the hole; No. 4-B has a similar amount of oil in the hole from sand at 2,105-32 feet and is waiting for a standard rig. Six and five-eighths inch casing was cemented at 2,083 feet at Atlantic's No. 5-B; No. 6-B is drilling at 1,278 feet and a derrick is up for No. 8-B, SE SW SE, Section 16-17-16. Surface casing was set at 112 feet at Atlantic's No. 8 Goodwin, Section 16-17-16, and the test is drilling at 1,615 feet. Bond & Evans' No. 3 Kilgoe, Section 4-17-16, has 450 feet of oil in the hole from

(Continued on Page 132)

SUN OIL CO. OBTAINS ACREAGE IN NEW MEXICO AND WILL DRILL TEST

By Special Correspondent

ARTESIA, N. Mex., May 29.—The Sun Oil Co. is the latest of the major producers to enter southeastern New Mexico. A large block of acreage, close to the Texas line has been obtained and a steel derrick is under erection in the SE of Section 21-25-30. The contract made with Hugh Burch, Fort Worth drilling contractor, calls for a test to 3,500 feet.

While many of the major companies are playing that area to the south and southeast, the counties to the north are also attracting attention, and a large amount of geological work is being done in Chaves, Curry, De Baca and Roosevelt Counties. Three tests now drilling to the north are being watched closely. The Capital Oil Co.'s No. 1 on the Mesa structure in the NW, Section 4-1-30, Roosevelt County, is drilling at a depth of 1,150 feet. In Curry County Sanders' No. 1 in the W half NW, Section 11-5-35, is rigging up to drill deeper, the bottom of the hole being 837 feet. The McAddo test in De Baca County, SW cor. NE, Section 16-1-27, has been taken over by the Navajo Oil Co. of Los Angeles.

In Lea County, drilling of the Maljamar Oil & Gas Corp.'s No. 1 Baish, in Section 21-17-32, continues to be slow, the hole now being down 3,830 feet. Broken formations continue to be picked up, with the next pay looked for at 3,880 feet, corresponding with the upper New States pay found in Section 4-18-28, north of the Artesia Pool. This is based on a correlation made from all of the wells drilled in this section of the state and which has proven correct up to the present depth.

Another test is being spudded in by the Maljamar corporation, this being No. 1 on the Grace Mitchell permit in the SW Section 5-17-32. A location has also been made on the Lloyd Simon permit in the SW cor. of Section 29-17-32 and will be validated immediately.

To the south of the Maljamar's gasser, the crew on the Covert test in Section 15-21-33 are underreaming the 12½-inch casing at 375 feet.

Gas North of Artesia

North of the Artesia Field, The Texas Company's No. 5 on the George Hobb permit is attracting attention. This well, located in the center of Section 17-17-28, 2 miles north of the Navajo Oil Co.'s producer, struck a million feet of gas at 1,846 feet. The depth is now 1,965 feet.

After testing 16 feet of sand, topped at 2,432 feet in the No. 8 of the Twin Lakes Oil Co. in Section 28-18-28, which sand was found to contain little free oil, the hole is being carried down as a deep test.

The Ohio Oil Co. has a nice producer in No. 5 on the Toomie Allen lease in the NE SE, Section 28-18-28, which was drilled to 2,690 feet. Fifteen feet of pay was encountered in this well.

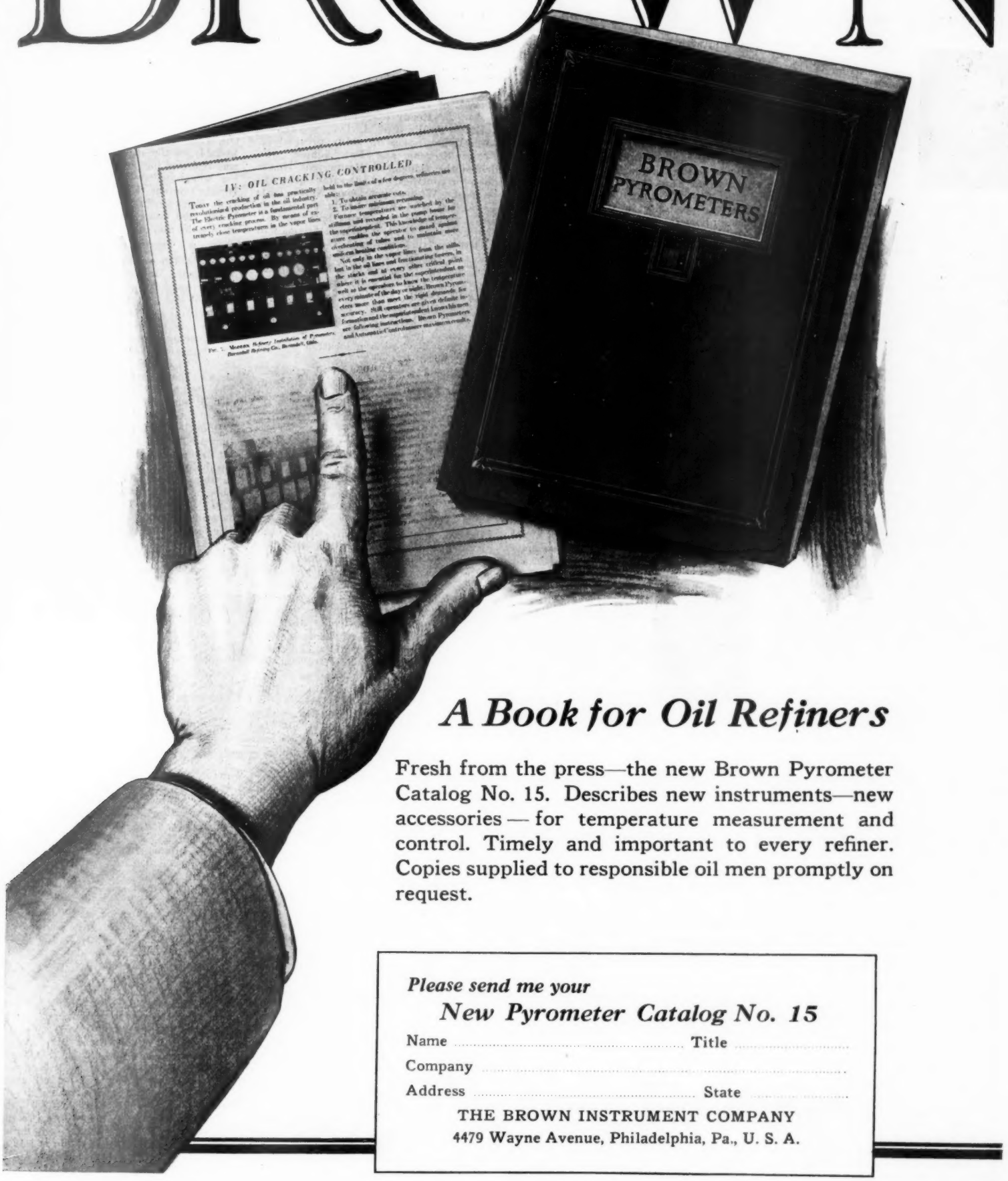
Flynn, Welch & Yates are drilling in their No. 45, NE SE, Section 21-17-28, the hole being down 2,192 feet. This company has an enviable record as to completions, having only one dry hole against a total of 50 producers, 2 of which are gas wells.

Good time is being made on No. 1 of the Empire Oil & Gas Co. in the SW of Section 35-17-27, the hole being down 405 feet. This test is located west of the productive area.

After several weeks' unsuccessful fish-

(Continued on Page 132)

BROWN



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First Test of Promising Territory

International Oils Spuds in On Eastern End of Lesser Slave Lake. Expects to Reach Oil at About 2,000 Feet

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ont., May 29.—In northern Alberta, International Oils, Ltd., is reported to have spudded in an important test on its leases at the eastern end of Lesser Slave Lake, north of Edmonton. This is the first attempt to test on a practical scale a very promising but somewhat isolated territory. A standard outfit is being used, the test starting with a 17-inch hole. Frank R. Poss of New York, who is now in Alberta in connection with the season's work, is general manager of the company, while the drilling operations are in charge of A. P. Phillips, who has had extensive experience in Alberta drilling, having put down the first seven wells in the Viking gas field, in addition to other drilling.

International Oils Limited, Inc., of New York is a holding corporation controlling the entire capitalization of International Oils, Ltd., of Canada. The company's acreage in the Lesser Slave Lake area consists of three blocks. At the eastern end of the lake is a solid block of 34,871 acres, while in the High Prairie district at the western end of the lake are two blocks of 955 and 159 acres. No. 1 test is being drilled in the southerly portion of the large block at the eastern end of the lake. This area has not previously been tested. One test has been partly drilled in the High Prairie section, by a syndicate headed by S. E. Slipper, government geologist; this test, started in 1924, is expected to finish this year, but has not yet been carried to a conclusive depth.

The Lesser Slave Lake area lies between the Rocky Mountain foothills on the west and the Athabaska tar sand outcroppings on the east. Drilling in the Peace River district to the northwest has uniformly disclosed the presence of an oil sand apparently corresponding to the Athabaska tar sands, though the Peace River area lacks the structural conditions favorable to accumulation of oil in commercial quantity. Examination of the Lesser Slave Lake area by Trevor W. Starkey, F. G. S., and other geologists has disclosed the occurrence of two folds or anticlines which cross each other in the acreage at the eastern end of Lesser Slave Lake. It is supposed that the oil-bearing formations, which come to the surface farther east on the Athabaska, are here buried beneath approximately 1,700 feet of overlying strata, including a 300-foot bed of shale immediately overlying the sand. With favorable structural conditions it is believed the oil has been collected and retained, and will be reached in approximately 2,000 feet of drilling. The tar sand beds in the Athabaska district have an approximate thickness of 200 feet.

International Oils, Ltd., is planning to drill a series of five tests at different points on its acreage. No. 1 well is about 9 miles from the E. D. & B. C. Railroad. Numerous oil seepages have been known for years along the shores of Lesser Slave Lake. It is expected that No. 1 well will be finished by September.

Flowing by Heads

In the Irma-Wainwright Field, east of Edmonton, Edmonton-Wainwright No. 1 LSD 4, Section 29-45-6w4, is flowing by heads and making 150 bbls. a day or better of 19 gravity oil. The well is waiting for tubing. In the Irma district, the Edmonton-Wainwright Oils, Ltd., drilling the Irma Oil Development Co. test, LSD 16, Section 28-45-9w4, at around 1,200 feet, has struck a 5-foot gas sand with what looks like commercial production. After coring into the underlying strata to make sure that the gas sand would not be endangered by water, preparations are being made to set the casing and drill the well in. If satisfactory production is secured, it may be finished as a gasser at this depth, failing which, it may be deepened to the next sand. The gas horizon here is between 500 and 600 feet higher than in the Maple Leaf Oil & Gas Co. well in the Wainwright section of the field; and it indicates the posibility in the Irma section of a shallow gas field of some importance.

In the Wainwright area, Model Oils, Ltd., which is drilling in the Montana Field, has secured acreage and will locate a test for oil. North of the Maple Leaf Oil & Gas Co. gasser, Fabyan Petroleums, Ltd., LSD 8, Section 24-45-8w4, has a rotary rig up and a gas line to the Maple Leaf well, and at last reports was about to spud in. Interior Oil Co., Section 36-33-7w4, is securing a new outfit to replace the one destroyed by fire some weeks ago, and will resume drilling at 1,400 feet. Britannia Oils, Ltd., has secured 12,500 acres in the Wainwright area, and will drill No. 1 test in LSD 5, Section 29-45-6w4, close to the British Petroleums and Edmonton-Wainwright producers. Officers of the company are: President, Dr. E. W. Allin; secretary-treasurer, Dr. W. D. Chapelle; directors, Dr. Frank W. Crang and William Simpson, all of Edmonton.

Ready to Spud In

Emerald Oils, Ltd., LSD 8, Section 30-45-6w4, has a rig up ready to spud in. Frank Stevens and Pat Adams, who drilled the Edmonton-Wainwright No. 1, have the contract, and the same outfit will be used. Wainwright Dome No. 1, LSD 7, Section 31-45-6w4, has a derrick up and a rotary outfit is being brought from California for the test. Hugh Adams will look after the drilling. Western Consolidated Oil Co. No. 2, Section 1-20-3w5, is rigging up, in charge of Hugh Campbell. Alert Oils, Ltd., of Calgary, has spotted a test in LSD 8, Section 11-45-7w4. Maple Leaf Oil & Gas Co. No. 2, Section 19-45-8w4, is rigging up. Shamrock Oils, Ltd., has a location in Section 8-46-6w4. Wainalta Oil Co. has a location in LSD 4, Section 33-45-6w4.

In the Jumping Pound district, 25 miles west of Calgary, Imperial Oil, Ltd., Bow River No. 1, LSD 15, Section 12-25-5w5, is reported down 2,162 feet and drilling. At this depth the well is still drilling hole to carry down the 12½-inch casing, and is thus in a position to go to 6,000 feet if necessary. The drill is well down into the Dakota sand, and is pretty sure to get into the Madison limestone if that formation underlies the Jumping Pound structure. In the southern foothills west of Nanton, Imperial Oil, Ltd., Rice Creek No. 1, Section 4-14-2w4, in the third week since drilling was resumed has reached 4,090 feet, drilling hole to carry down 6¼-inch casing. In the Border Field the Imperial Oil, Ltd., Erickson Coulee test, east of Coutts, is reported down 1,500 feet with a 12½-inch hole and drilling rapidly.

Turner Valley Field

In the Turner Valley Field, southwest of Calgary, McLeod Oil Co. No. 2, LSD 15, Section 1-20-3w5, has resumed drilling at 3,661 feet after setting casing within 20 feet of the bottom. At this depth the test is 19 feet in the dolomitic limestone, being the first test since Royalite No. 4 to enter the deep limestone formation. A second test of the formation shows slightly less percentage of dolomite. The log of McLeod No. 2 tallies very closely with Royalite No. 4, the well has already a 2,000,000-foot flow of wet gas. Dalhousie Oil Co. No. 3, LSD 10, Section 13-20-3w5, has resumed drilling, the bit being now past the 3,300-foot level. Swabbing tests of the light gravity crude at this horizon show a flow of about 20 bbls. a day. Dalhousie Oil Co. No. 1, LSD 4, Section 18-20-2w5, at 3,545 feet is still pounding on oil iron but is now one foot below the depth of the old Southern Alberta No. 1. Dalhousie No. 5, LSD 16, Section 30-19-2w5, is rigged up, and will spud in next week.

Royalite Oil Co. No. 4 is maintaining a daily wet gas production of about 17,500,000 feet a day, which is put through the scrubbing plant, together with around 500 bbls. of crude naphtha. Royalite No. 5, LSD 13, Section 7-20-2w5, is reported fishing for lost tools at 3,105 feet. As Royalite No. 4 got its heavy producing horizon at 3,740 feet, it is estimated that two months' drilling will be required before No. 5 gets definite results.

Illinois-Alberta Oil & Refining Co. No. 1, LSD 14, Section 12-20-3w5, has run 4¾-inch casing to the bottom of the hole at 3,570 feet and resumed drilling. After drilling another 40 feet into the limestone the casing will be set and open hole drilled to the producing horizon. This test has been drilling intermittently since 1914, when it was started as Northwestern Pacific No. 1. In 1916 it was taken over by the Illinois-Alberta Oil & Refining Co., headed by A. Owen Jennings. In the fall of 1919 the first oil was struck at 2,227 feet and the drill carried down in the sand to 2,270 feet, the drillers in the first 30 days bailing 800 bbls. of 57 degrees. An absorption plant was built and operated for a couple of years. In January, 1923, a 3,500,000-foot gas flow was struck at 3,040 feet, the well later catching fire. Drilling was later resumed, developing 2,000,000 feet additional at 3,338 feet, and after the Royalite No. 4 strike, it was decided to carry the test into the Madison limestone.

Possible Light Oil

Vulcan Oils, Ltd., No. 1, LSD 11, Section 13-20-3w5, is reported drilling below 4,700 feet. At 4,690 feet the drill entered the band of black shale which in other wells has been met about 60 feet above the limestone. The structure at this point is more than 1,000 feet lower than in Royalite No. 4, approximately a half mile distant, indicating a possibility of light

(Continued on Page 132)

MOFFAT FIELD, COLORADO, YIELDS 700-BBL. WELL. DRILLING NEAR MOAB

By F. B. Taylor
Staff Correspondent, Rocky Mountain Area

CASPER, Wyo., May 29.—The Texas and Transcontinental oil companies drilling a joint well in the Moffat Field in Colorado, on the Knowlton lease, Section 10-4-91, reached the Dakota sand at 3,879 feet and found a producer of 700 bbls. natural flow. The Moffat Field was at first considered to cover a large area but after the first few wells came in, it was decided that the field would prove to be only a small area production and that there was small chance of extensions to the field. This has been borne out in the record of development. The Texas Company and the Transcontinental Oil Co. have found good production, but nothing has been developed outside of these leases. With the new well, production of the field is expected to reach about 5,000 bbls. daily.

The Texas Company operating in the Sand Draw Field in Fremont County, Wyoming, has at last drilled through the gas sand in that field. Many attempts have been made to get a hole below the gas horizon at Sand Draw, but so far these attempts have been failures. The heavy rock pressure coupled with the gas flow, always prevented the tools from drilling deeper.

It has long been considered that a probable oil pool lay below the gas sand at Sand Draw and The Texas Company will endeavor to test the theory in the well now drilling. The heavy flow and rock pressure was shut off by using barium sulphate in solution with the water in the hole. The depth of the sand in The Texas Company well is 2,751 feet to the top.

Two Tests Abandoned

Two deep tests that have been carried in the records of wells drilling have been abandoned definitely. The Foreman test, drilled by the Foreman Oil Co., Section 24-26-62, near Lingle, Wyo., has been abandoned at 5,000 feet. This location is close to the eastern boundary of the state and was drilled through a Tertiary overlay that prevented a close study of the geology of the area. No production was found at any depth. The Nebraska Oil Corp. has abandoned the deep well started last year north of Chadron, Nebr. This well reached a depth of 2,940 feet and found some showings of oil and gas, but nothing to warrant stopping drilling. This area is also covered with Tertiary.

In the LaBarge Field, the Fawcett-McPerrin Syndicate drilling on Section 3-26-113, found production at 800 feet that is estimated at 50 bbls. This completion makes the tenth well in that field making commercial production from the shallow depths. This oil is a very high gravity crude, found in the Tertiary shales at about 800 to 1,500 feet. It is considered to lay in sand lenses in the shale and these lenses can only be located by drilling as there is no surface indication to guide the operators.

Second Test at Moab, Utah

In Utah, all interest is now centered in the country south of Moab. The second well is now about 800 feet deep and will probably reach the sand found in the discovery well on the Cane Creek structure about the latter part of next month. This second test is being drilled on the Shaffer Dome, about 4 miles south of the discovery well, by the Midwest Refining Co. The second test found a showing of oil at 765 feet that would have made about 2 bbls. The show was struck in lime where a stratum of sand was found that gave a quantity of high gravity oil. This indication is taken to show that a possible pool of light oil may also be found in the district similar to the oil now being produced in northern New Mexico in the Hogback and Rattlesnake fields.

The United Carbon Co. has bought the gas rights on the Cisco Dome, in Grand

(Continued on Page 137)

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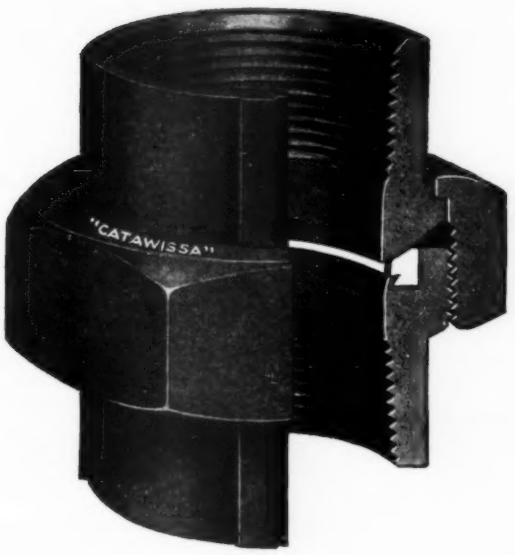

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Gulf Coast Area Shows More Activity

Crude Price Increases Stimulate Drilling. Humble Enters Mirando District As Buyer of Production There

By P. L. McGreal
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., May 31.—Wells completed during the week in the Gulf Coast region total 21, of which 5 were dry. The new production aggregates 8,828 bbls. Nine holes are bailing at the close of the week.

A total of 209 wells are now drilling in the pools and outside, scattered over south Texas and south Louisiana, with 63 rigs on locations. By "rigs" in this country is meant derricks standing. The recent advance in prices for Coastal crudes and the grading of "B" on a gravity basis is having the effect of stimulating activity. The Gulf Production Co. leads all others in the amount of drilling and in new production. The company is drilling 41 tests with 6 derricks on locations for more. The gross new production developed during May was 33,291 bbls. and the Gulf Co. netted 8,700 bbls. of the total. The Yount-Lee Oil Co. got 13,300 bbls. of the total from three deep sand completions—two at Spindletop and one at Sour Lake. The Rycade Petroleum Corp. is credited with 2,700 bbls. from two wells at Nash Dome. It will thus be seen that the amount of new production developed by the other major companies and small operators was very light despite continued drilling.

The Humble Oil & Refining Co. is drilling 13 tests and starting 4 more, and the Rycade Petroleum Corp. is drilling 8 tests. The Texas Company has 12 rigs in operation with derricks up for 3 more and the Sun Oil Co. is running 8 now and rigging up 2 additional. The Sinclair Oil & Gas Co. has 3 running at Boling and the Atlantic Oil Producing Co. 2. The Humphreys Corp. is a recent entry into the Coastal area and is drilling 3 holes, 2 at Boling and 1 at Sour Lake.

Boling a Disappointment

The Boling Pool is a disappointment to date. Such production as has been developed there fluctuates from week to week, as the wells either sand or decline and are worked over. The rock salt area is much greater than was expected by the geologists and deep drilling in the original productive area has as yet produced nothing.

As a result of these conditions we find the Humble Oil & Refining Co. going into the Mirando district as a buyer of that crude, which is low grade but has a satisfactory high lubricating content. That company is preparing to spend more that $1,000,000 to lay an 8-inch line from the various pools to seaboard at Ingleside, near Corpus Christi and to provide storage facilities in the field and at the Gulf terminal. This, too, in face of the fact that the production is less than 10,000 bbls. per day. The price of Mirando crude is $1.25 per barrel against $1.60 for Coastal "A" grade, which may have some influence. It is reported the Magnolia Co. has purchased the entire holdings of the United North & South Oil Co. at Luling Field, which is another straw of more than ordinary significance. This company has a production of some 17,000 bbls. per day from 215 wells, pumped electrically. The stockholders of the United North & South Co. will meet in New York June 1 to approve the sale. The present production is from the Edwards lime at 2,100-2,200 feet. The United North & South Co. retains the rights to production found below the Edwards. The Magnolia Co. has the only trunk line to the field.

Gross production in the Gulf Coast pools for the week ending May 29 was 106,745 bbls. Compared with last week, Boling decreased 1,500 bbls.; Hull, 2,800 bbls.; Nash Dome, 540 bbls.; Spindletop, 2,600 bbls.; the Goose Creek Pool increased 450 bbls.; Lockport, 4,650 bbls.; Orange 200 bbls. and Vinton, 400 bbls.

The other pools averaged about the same.

The following is the estimate for each pool:

Pool—	Gross Bbls.
Boling	5,300
Batson	1,475
Blue Ridge	900
Barber Hill	710
Big Creek	1,010
Dayton	45
Damon Mound	950
Edgerly (La.)	660
Goose Creek	10,150
Humble	4,500
Hull	19,200
High Island	600
Jennings (La.)	1,325
Lockport	6,200
Markham	75
Nash	1,500
Orange	11,100
Orchard	40
Pierce Junction	1,950
Piedras Pintas	100
Spindletop	9,500
Saratoga	1,425
Sour Lake	6,050
South Liberty	5,725
Vinton (La.)	6,650
West Columbia	9,400
Welsh-Anse La Butte	75
Miscellaneous	120
Total	106,745

Southwest Fields

The estimated gross daily average for the Southwest Fields is placed at 38,022 bbls. for the week, a decrease of 1,708 bbls. compared with last week. The greater part of this decline is in the Lockhart (Lytton Springs) Field. The estimate for each field is as follows:

Field—	Gross Bbls.
Luling	21,250
Mirando	8,100
Somerset	2,100
Calliham	137
Rockdale-Minerva	985
Lockhart	5,450
Total	38,022
Grand total for week	144,767
Grand total last week	148,660
Net decrease	3,893

Wells Completed

New pools and worked over wells contributed much of the new production for the week. In the Lockport district in Calcasieu Parish, Louisiana, the Vacuum-Gulf's joint No. 9 Miller came in Wednesday flowing 3,000 bbls. at 4,397 feet, deepened from 4,350 feet. At the close of the week the well had dropped to 800 bbls. The same interests are fishing in Nos. 7 and 8 Miller. No. 10 is drilling around 1,544 feet with a derrick for No. 11. No. 4 Lock-Moore is below 3,980 feet. No. 1 Friedberg & Wolf is drilling deeper at 5,090 feet and No. 3 Farquhar is at 4,085 feet. A derrick is up for No. 3 Bordages.

In the Boling Pool the Oxford-Southern Exploration Co.'s No. 4 Floyd is in at 3,325 feet flowing 1,400 bbls. The Vacuum Oil Co.'s No. 2 Hooper is swabbing at 3,800 feet and No. 3 is reported in 9 feet of sand at 3,571 feet. No. 1 Hooper is the deepest hole in the district, standing at 4,553 feet. The Sinclair Oil & Refining Co.'s No. 2 Taylor is bailing at 3,475 feet and No. 4 Taylor is doing the same at 3,850 feet. The Texas Company's No. 5 Taylor is bailing at 3,550 feet.

The Rycade Petroleum Corp.'s No. 2 Wisdom off the Nash Dome on the line of Fort Bend and Brazoria Counties, is heading 290 bbls. No. 6 Wisdom was abandoned. Nos. 6 and 7 Nash completed last week are now making 700 and 520 bbls. respectively. No. 2 Wisdom is at 4,395 feet. The oil around the Nash Dome is about 20.5 gravity. No. 5 Nash, the discovery well, which came in last January, was deepened to 4,182 feet and sanded.

Pierce Junction

At Pierce Junction, H. R. Cullen deepened No. 6 Howe to 4,100 feet and it started flowing 1,500 bbls., but has since dropped to 1,000 bbls. The Navarro Oil Co.'s No. 2 Cain is making 25 bbls. at 4,100 feet. The Gulf Production Co.'s No. 18 Taylor is drilling around 2,900 feet and the Rio Bravo Oil Co.'s No. 2-P Settegast on the north side, is at 2,715 feet.

In the Orange Pool, worked over holes made up the week's completions. The Brownie Babbittee Oil Co. revived No. 5 McLean, flowing 350 bbls. at 3,575 feet. The Sun Co. did the same with No. 1 Bellisle and it came back heading 400 bbls. at 3,650 feet. The Texhoma Oil Co.'s No. 14 Chesson will pump at 3,380 feet. The Rycade Petroleum Corp.'s No. 4-E Cow Bayou will pump at 4,610 feet. Nos. 1-C and 2-B were abandoned.

In the Vinton Pool, the Vinton Petroleum Co.'s No. 19 Rescue came in flowing 1,000 bbls. at 2,300 feet.

In the Hull Pool, the Gulf Production Co.'s No. 3 Thomas, a work over, headed 300 bbls. The Humble Oil & Refining Co.'s No. 21 Guedry is a 60-bbl. pumper at 2,975 feet and No. 6 Merchant is making 40 bbls. at 3,000 feet. The Republic-Houston Oil Co.'s joint No. 127 Dolbear will pump at 1,735 feet. The Gulf Production Co.'s No. 17 Baldwin is bailing at 3,100 feet and No. 5 Phoenix at 2,400 feet, both work overs.

Other Completions

Other completions were as follows: Big Creek Pool, Gulf Production Co.'s No. 28 Davis pumping 25 bbls. at 3,145 feet.

Edgerly Pool, Rex Oil Co.'s No. 2 Hunter will make a pumper at 3,200 feet.

Sour Lake Pool, Peveto Oil Co.'s No. 12 Carpenter pumping 8 bbls. at 990 feet. Barclay Oil Co.'s No. 3 Rogers bailing at 1,000 feet. Humphrey Corp.'s No. 1 Jackson, bailing at 4,100 feet.

The Vacuum Oil Co. abandoned No. 3 Teel on the southwest side of the Saratoga Pool at 4,482 feet in cap rock.

The Powell Oil Co.'s No. 6 Bryan in the Goose Creek Pool wil make a pumper at 2,700 feet. The Humble Oil & Refining Co.'s No. 68 Smith is bailing at 4,400 feet.

In the Spindletop Pool, the Baker Oil Co.'s No. 15 Trembly is a 5-bbl. well at 990 feet. The production of the Yount-Lee Oil Co. from its five deep sand wells on the McFadden lease on the southeast flank of the dome, is around 3,800 bbls. per day.

Outside of the pool's proper the Roxana Petroleum Corp. abandoned No. 2 Kropp in Brazoria County at 785 feet.

W. C. Moore quit No. 6 Blencke, a formation test in Chambers County.

The Houston Oil Co. has a big gas well in No. 1 river bed in Live Oak County.

Drilling in the Pools

Another Well in Fort Bend

Late in the week the Gulf Production Co.'s No. 6 Moore at Orchard Dome,

(Continued on Page 154)

SALT WATER ABOVE DAKOTA THEORY WILL BE TESTED IN NEW MEXICO

By Special Correspondent

FARMINGTON, N. Mex., May 28.—Interest in this field has centered around the Erdman and Hall tests on the Red Mesa structure. Cavings in the Hall well caused a shutdown to await casing, and it was generally believed that the casing would not be run if the Erdman well should fail to prove production. Some days later the Erdman well was making a very hopeful showing, the oil seepage from the shale being heavy. Drilling was being conducted in high hopes when a heavy flow of salt water was encountered in what was believed at the time to be the upper Dakota sand. The water rose to within 200 feet of the top although encountered at a depth of 3,464 feet. Drilling was stopped immediately. An analysis of the water shows it to be very salty with a showing or sulphur and some geologists assert that it is 100 feet above the Dakota. These call attention to the fact that where water is found in the Dakota here it has been uniformly fresh and that in a number of holes salt water has been encountered a short distance above the Dakota. They say it is usually in a stray sand at the base of the Mancos shale which is unquestionably marine. It is very likely that further drilling will be done to test this theory.

No test has yet been made by pump on the New Mexahoma's No. 1 which was brought in a producer recently. However, New Mexahoma's No. 2 has been spudded in 600 feet northeast of No. 1 and is now drilling at a depth of 300 feet. Both wells are located on Section 9-30-11, adjoining the town of Aztec on the west.

The Continental-Santa Fe companies, operating on the Rattlesnake structure, Section 2-29-19, have reached a depth of 2,405 feet in their No. 17. This is the only drilling now being done in this structure. The progress is slow owing to the large amount of water that has been encountered in the McElmo formation.

The Continental company, operating on the Table Mesa structure 25 miles southwest of Farmington, is cementing in casing at a depth of 1,315 feet in its No. 7 and expects to drill the well in this week. It is in Section 10-27-17.

The Ute Consolidated Oil Co. which has taken over the Childers well on the Ute structure, Section 24-31-15, has a rig on the ground and expects to resume drilling at 2,050 feet. It is also drilling on the Mancos structure 19 miles north of Shiprock and is down 300 feet. The Portage Oil & Gas Syndicate, drilling on the Glade structure 6 miles northeast of Farmington, Section 24-30-13, is having trouble with caving. It has decided to pull the 6-inch casing and underream and lower the 8-inch casing that was set at a depth of 1,360 feet. About 50 miles of the 95-mile pipeline of the Continental Oil Co. from Rattlesnake and Table Mesa structures to the Santa Fe Railroad at Gallup is now completed and the work is moving rapidly. The line will be completed by July 1. As soon as completed it will begin the delivery of 6,000 bbls. daily to Gallup for the Humble Oil Co. to be used in the Baytown refinery.

The Congress Oil Co. is moving casing to its test and will resume drilling at a depth of 1,285 feet as soon as the casing is set. It is intended to go to the Picture Cliff sand. The test is located in the Coots Canon district about 12 miles southeast of Farmington, Section 34-29-11.

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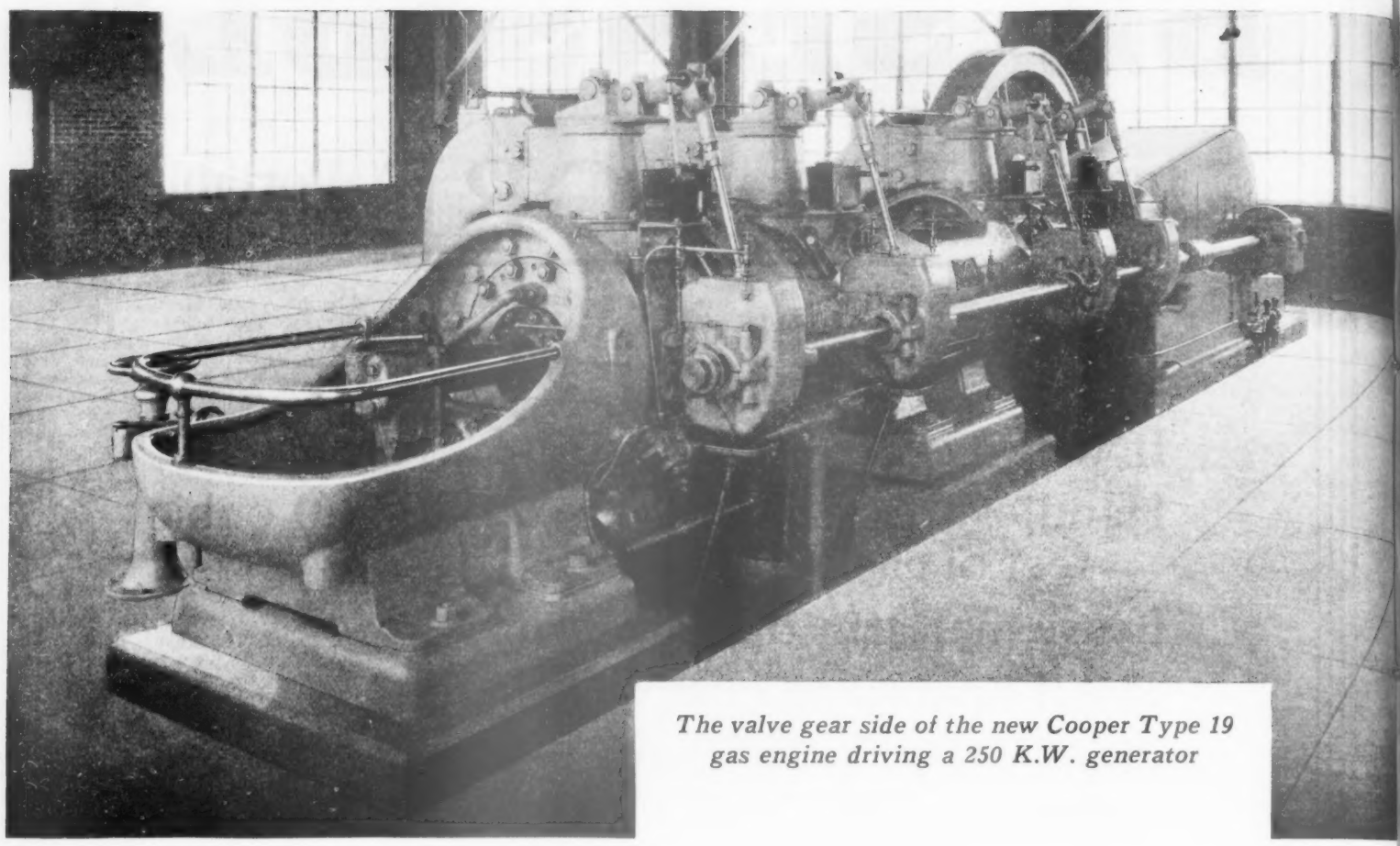

The valve gear side of the new Cooper Type 19 gas engine driving a 250 K.W. generator

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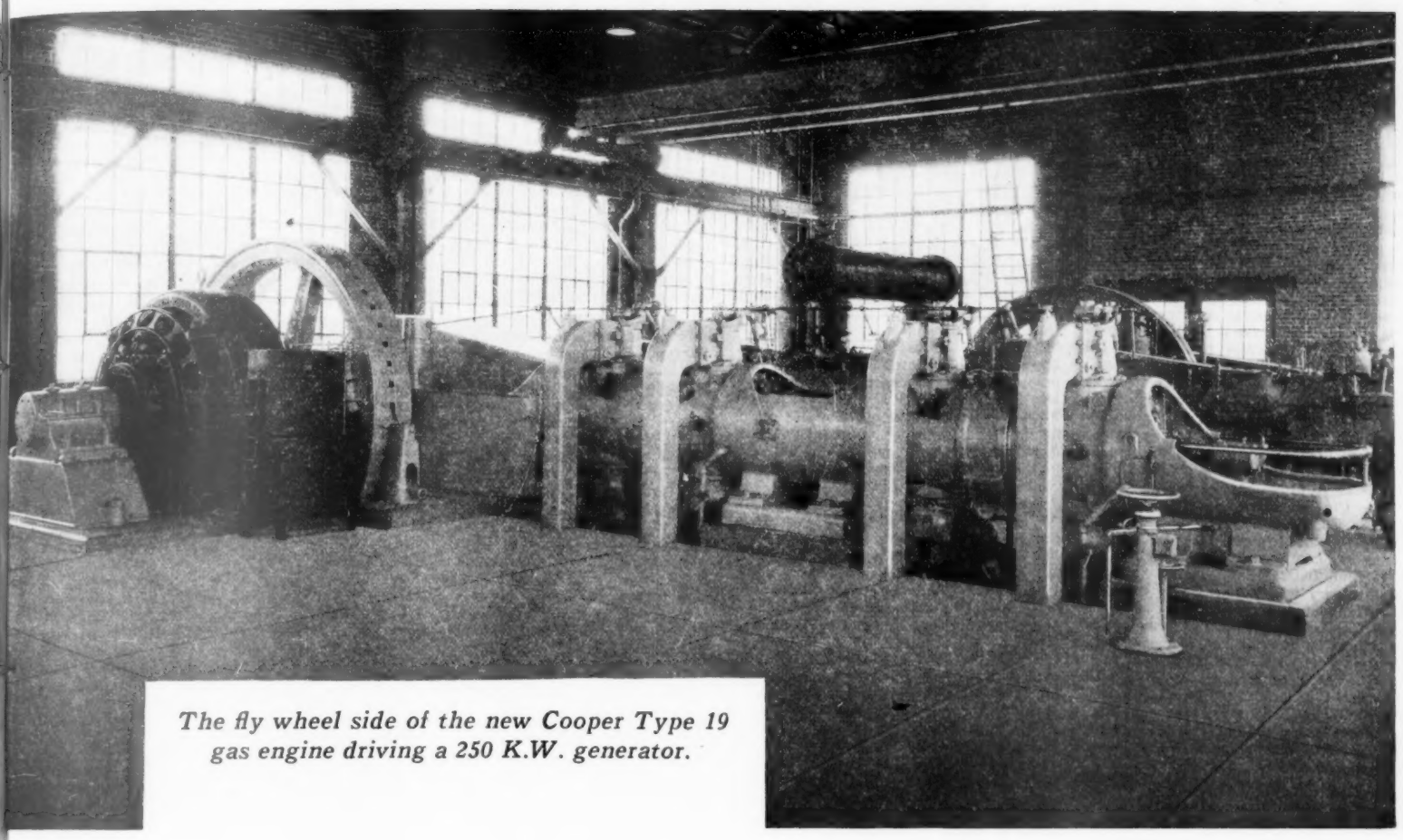

The fly wheel side of the new Cooper Type 19 gas engine driving a 250 K.W. generator.

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Cole Field Well 30 Barrels an Hour

Test in Eastern Bexar County and New Sand in Medina County Wildcat Features of Week in Southwest Texas

By B. D. Stevenson
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., May 31.—Completion of a good oil well in the Cole Field in Duval County by the Cin-Tex Petroleum Co. in its No. 6 Benavides which flowed 30 bbls. an hour steady for 24 hours and at the end of the time was still making the same amount, failure of two more tests in the Piedras Pintas district to make wells and the Marland Oil Co. test of the Edwards lime in eastern Bexar County and a new sand at 828 feet in the Ina's wildcat test in Medina County on the Hoffman tract are the matters of chief interest in southwest Texas. For the most part the drilling operations while making progress have not added features of particular interest.

Cin-Tex Petroleum Co., which brought in the first oil well in the Cole gas field in Duval County on Block 16 of Section 10 of the Benavides ranch in the Arispe grant, completed its No. 6, approximately 600 feet almost due north of the discovery well. Approximately 1,100 feet south of the Cin-Tex discovery well Cole Petroleum Co.'s No. 22 cored a rich sand at the regulation depth and was setting casing to make a test. It looked like an oil well. Between Cole's No. 22 and the discovery well of Cin-Tex is the Cole No. 17 about 400 feet south of the discovery well which is making conisderable oil though it first came in as a gas well. The two Cole wells, Nos. 22 and 17, and the Cin-Tex discovery well and its No. 6 are almost in a straight line north and south and thus far are the best wells that have been completed in the field. Cin-Tex No. 5 is due north of No. 6 about 300 feet and it is a good well also.

Field May Be Narrow

West of this line of oil wells is gas. East of it there has been but little drilling. Houston Oil Co. has completed three producing oil wells, the farthest away being its No. 5 which is nearly 1,000 feet southeast of the discovery well. Houston's No. 1 is a 300-foot offset to the discovery well. None of these wells has come up to those of the Cin-Tex and Cole which might be interpreted to indicate that the field would be narrow and running north and south but the drilling has been too limited thus far to prove this. Humphreys and Houston Gulf Gas (Moody-Seagraves) nearly a mile north and Barkley & Meadows and Morgan a full mile north have found the sands thicker and with the bottom showing oil but thus far have completed only gassers. Cin-Tex's Nos. 1, 2 and 5 are producers. Cin-Tex No. 3 was drilled but failed to respond and is temporarily abandoned. No. 4 in the corner 150 feet from the northwest and northeast lines of Block 16 of Section 10 has not been drilled. No. 7, located on the same lease and 270 feet from the southwest line and 155 feet from the northwest line is drilling at 1,400 feet and should be down to the sand at a little less than 1,800 feet early this week. Humphreys and Houston Gulf Gas are down about 1,200 feet in No. 3 Barkley Meadows are ready to test in No. 2 in Block 4, Section 10, 150 feet from the northeast and southeast lines at 1,717 feet. Humphreys and Houston Gulf Gas No. 1 King-Harper in Survey 323 a little to the north is a location. Gibson Oil Corp.'s No. 1 Ayres, on Survey 353, a mile to the east of the discovery Cin-Tex well, is being abandoned at 2,260 feet. It encountered a cavity at 2,040 feet but drilled through this and got salt water at 2,260 feet.

Other Operations

George M. Ball in No. 1 Roach, a mile or more east of Gibson on Survey 463, is drilling at 1,600 feet. Cole Petroleum Co.'s No. 19, in Block 13 of Section 11, and 150 feet from the northwest and northeast lines is spudded in and has been drilling for a week. It is 450 feet nearly due west of the discovery well. Cole Petroleum Co.'s No. 25 Benavides in Block 1 of Section 18 and 150 feet from the southwest and northwest lines, has been spudded in and drilling a week. It is a full mile and a half to the southeast of the discovery well and is exactly a mile southeast of Houston Oil Co.'s No. 5, which is the nearest producer. Houston Oil Co., which has been working for some time with its No. 2, has it on the pump. After No. 1 had been pumped for some time it started to flow at the rate of 450 bbls. a day. Houston has put both Nos. 2 and 5 on the pump and is in hopes that pumping will make each a flowing well. Depth of No. 2 is 1,807 feet which is a little deeper than the other wells in the field. Houston, which temporarily abandoned its No. 3, is going back into the hole and will try to make it a producer. No. 4 is standing at 1,994 feet after being deepened without benefit. Oil stood in No. 5 at 300 feet of the top which is about the performance of the Houston's No. 1 before it was put on the beam. O. W. Killiam's No. 7 Benavides in Block 1 of Section 10 has erected a derrick 150 feet from the northeast line and 510 feet from the southeast line. Killam-Slocum in Block 4 of Section 15 is drilling at 1,400 feet. O'Hern, Putnam Seacord in Block 12 or Survey 174 several miles south of the field have a location.

In Webb County in the Cole Field. Killam-Alexander's No. 1 Benavides on Block 4 of Section 12 is ready to test with a sand from 1,737 and 1,800 feet the total depth. Cole Petroleum Co. has set casing at 1,631 feet and with a sand from 1,640 to 1,647 feet in No. 24 Benavides in Block 1 of Section 15, barely over the line in Webb County. Cole's No. 23 Benavides on Block 9 of Section 8 is drilling at 1,500 feet. Cole's No. 10 "A" on Block 5 of Section 3, a replacement well, has spudded in. Cole's No. 5 Arispe on Block 11 of Section 12 and No. 13 Arispe on Block 15 of Section 12 are locations.

Piedras Pintas Salt Dome

Piedras Pintas salt dome at Noleda in Duval County still consists of the discovery well of the Humble Co.'s No. 4 Walsh, brought in on December 20, 1925. Last week Humble tested its No. 5 Walsh, 450 feet to the southeast of No. 4, total depth is 4,105 feet. The discovery well was completed at 3,623 feet. No. 5 set 13 joints of screen and took in nine sands. Two-inch pipe was set with packer to shut off top water and when bailed it could lower the water only 200 feet. The pipe is being pulled and packer will set to shut off bottom water and tested again. Humble's No. 6, located due west of the discovery well, spudded in May 25. Humble's No. 7 is a location 500 feet north of the discovery well. Moody-Seagraves and William F. Morgan No. 1 Walsh, 450 feet southwest of Humble's discovery well, bailed last week after resetting liner and screen from 3,394 feet to the bottom, 3,619 feet, taking in all of the first test and 80 feet additional. It had a showing of oil but got too much salt water to make a well and is shut down for orders. Magnolia company at last reports was 2 feet into a rich oil sand and taking another core. The second core was taken but ran into dark sandy shale with only a trace of oil and the well is drilling deeper. These are the only tests on the Palangana salt dome.

Slightly removed from the Piedras Pintas salt dome Humble has abandoned its No. 4 Schallert on the Palangana salt dome at 2,860 feet. The hole was drilled to 3,531 feet when drill stem was lost in the hole. This was sidetracked from 2,300 feet and new hole drilled to 2,860 feet but the old drill stem continued to cause trouble and the hole was abandoned. This was the first of several tests drilled by Humble company there that got off the top of the salt plug and had a chance to make a well. Probably the rig will be skidded and another test drilled. Humble company's No. 8 Singer, in the same area, is drilling at 376 feet. Simms Oil Co.'s No. 1 Schallert, in the same area, is drilling at 2,850 feet.

Duval Wildcats

Murchison & Fain's No. 1 Peters on Survey 791 has spudded in and made a few hundred feet. Benedum & Trees' No. 1 Peters in Survey 182 is standing at 848 feet (corrected depth) waiting for water. Maurer & Duggan at 3,045 feet in No. 1 Willie Hoffman in Survey 123 are in hard rock and a new contract has been made and a heavier rig will be installed and the test carried to 5,000 feet, unless production is found above that. J. T. Graham's No. 1 Beall in Survey 571 in the northeastern corner of Duval County is drilling at 2,500 feet. Simms Oil Co.'s No. 1 Dinn in Survey 666 is shut down at 1,408 feet while the crew is building a separator in Jim Hogg County in the Randado Field for No. 2 Palacious which is making gas and oil.

Bruni Tracts in Webb

Operators in the Bruni tracts in Webb County, immediately south of the Aviators Pool of the Mirando Field where the producing area is widening out and considerable better production is being secured, are beginning to estimate the ultimate total recovery and to count up possible profits. The most conservative estimates are that a total recovery will be about 5,000 bbls. to the acre, though there are some who place it as high as 8,000 bbls. to the acre. A number of wells completed have about 5 feet of sand. Wells are being contracted, turnkey job, at $6,500, drilled, cased and brought in. The wells must be pumped and, including power plants, pump equipment and everything necessary to operate a string of wells, it is estimated that close to $10,000 a well will be the total cost. Production is had at close around 1,700 feet.

One operator of long experience has figured it out that on an 80-acre lease there will be a recovery of 400,000 bbls. Less the fee owner's royalty of one-eighth, the recovery will be 350,000 to the operator. Mirando crude is now posted at $1.25 a barrel and not likely to be set back any. Twenty-five cents a barrel will lift the oil. Counting the total recovery therefore at $1 a barrel or $350,000 on an 80-acre lease and subtracting the $140,000 original investment leaves a profit of $210,000 from an 80-acre lease developed with 14 wells. Some operators are putting on 16 wells.

New Randado Field

In the new Randado Field in Jim Hogg County several miles south and a little east production is had at a little less than 1,300 feet. The flush production in some of the wells has been more than in the Bruni tracts. The Houston Gulf Gas Co.'s No. 4 at Randado, the best well thus far in that field, put 1,250 bbls. in steel storage in five hours natural flow but due to lack of pipeline at that time was choked down. It is now flowing 700 bbls. into the pipeline. Some wells farther east in the Randado Field are pumpers at around 100 bbls. a day. Estimates of profits are less certain than in the Bruni tracts where wells come in swabbing all the way from 400 to 800 bbls. a day and the first production goes a long way toward meeting the cost of the well. Some wells have been contracted in the Randado Field at $6,000 a well which seems a little high as compared with the other field and it is rather expected that wells will be completed at Randado for $4,000 or less, since one rig can complete two wells a month. Rigs were scarce when the $6,000 price was made. The Randado Field promises to be a profitable field also. The production is had at close to 500 feet less depth than in the Bruni tracts area hence the cost of the wells will be considerably less.

Webb County

There is an increase in drilling activity in the Mirando district confined largely to the territory south of the Aviators Pool, where the Mirando Field has very greatly widened out and where somewhat bigger production is being secured than in some of the older parts of the field. One of the most important transactions in this field the past week was the sale of a working half interest in the west half of Block 44 and the east half of Block 13 by George M. Ball to Murchison & Fain and R. E. Kennedy and the organization of the Mar-Tex Oil Co., Inc., which has taken over other property of George M. Ball in this district and which all means considerable new drilling.

Associated Oil Co. is drilling at about 1,000 feet in its No. 1 in the northeast corner of the south half of Block 44 of the Bruni tracts, three-fourths of a mile south of nearest production and if it makes a well will mean a considerable additional extension of the field. It should be in the sand by the last of this week. George M. Ball's No. 2, on the west half of Block 45, had casing set at 1,680 feet and is ready to be brought in. The working half interest in that tract was sold to Murchison & Fain and the No. 2 well is 300 feet south of No. 1, which is in the northeast corner of the block. No. 2, on the east half of Block 13, in which Murchison & Fain have the working half interest, is ready to set casing.

Simms & Co.'s No. 3 Bruni, in Block 10 of Survey 835 immediately west of the Bruni tracts, is drilling at 1,500 feet and should be ready this week to set casing at the producing horizon. O. W. Killam, on Block 7 of Survey 835, is deepening after mudding off 35,000,000 feet of gas 1,638 feet. The location is a little over a half mile north of Simms' No. 3 Bruni.

Crown Central is drilling at 1,200 feet in its No. 8 Bruni, in the southwest corner of the east half of Block 16, offsetting the Sun Oil Co. on the north. Same company's No. 9 Bruni, in the northeast corner of the west half of Block 43 is on the sand at 1,723 feet and ready to be brought in. This is a west offset to the Wheatley well, in the northwest corner of the east half of Block 43. The Wheatley well has been discovered to be 4 feet over the line on the west half of the block and was drilled on Crown Central land. The matter has been adjusted and Crown Central bought the well. The mistake in location was due to error in running the lines and it necessitates changing other locations slightly.

Moody-Seagraves are rigging up on No. 1 Bruni, on Block 12 of the Bruni tracts. Duke Phillips & Morgan are on the sand in their No. 1 Bruni, on Block 46, at 1,661 feet. George Echols is rigging up on No. 1 Bruni, on Block 68, 2½ miles east of production. Stubbe & Stubbe of Corsicana, are rigging up on Block 19 of the Bruni tracts. Staley & Wynne are down 600 feet on their No. 4, in the northeast corner of the west half of Block 18. It offsets a well of Ruthada Oil Co. (Frank Ketch of Ardmore) in the north-

(Continued on Page 138)

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California Output About Stationary

Little Decline Below 600,000 Barrels Daily Expected. Deep Zone Drilling May Offset Natural Decreases

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., May 29.—Although the total fluid stocks of crude and refined oils held on the Pacific Coast at the close of April showed a decline for the first time since 1923, one must not get too optimistic as the daily crude oil production is still above the 600,000-bbl. mark and the chances of it dropping very much below this figure are not very bright. A superficial analysis of the production figures for April shows that the daily decline of 4,224 bbls. registered during the month can be attributed primarily to a smaller output at Rosecrans and Inglewood, each of which dropped off about 2,000 bbls. daily. There was very little change in the other fields, some being up a little and others down.

Several months ago the writer predicted that crude oil production could not be expected to drop very much below the 600,000-bbl. mark before the summer of 1926 and that intercoastal shipments to the Atlantic and Gulf Coast ports would continue practically all during the year. This prognostication has proven correct during the first four months of this year and in view of existing conditions I see no reason why the original prediction should be revised. From a production standpoint, the outlook is not any too promising in view of the fact that no appreciable decline can be expected inasmuch as most of the fields have already reached the settled stage or are gradually doing so. Rosecrans and Inglewood will of course continue to drop off from month to month and, although the latter may decline some 10,000 or 15,000 bbls. daily between now and the end of the yar, this decline will probably be more than offset by increased production in the Ventura Avenue Field due to additional drilling.

Long Beach averaged 109,561 bbls. daily during April, as compared with 110,739 bbls. during the preceding month and, although there is considerable room for a further settlement, it is believed that deeper drilling may push the production curve upward for a short time between now and the close of the current year.

Deeper Drilling Important

In summing up the production situation it is apparent that the only districts which offer any relief are Inglewood and Long Beach and in each case development of the deep zone will arrest any possible decline and result in an increase. Deeper drilling at Long Beach is already under way but operators at Inglewood are wisely holding off for a more opportune time. Production in the older districts of the state has been comparatively stable for several years, while the newer fields, such as Santa Fe Springs, Huntington Beach and Torrance have shown practically no deviation for the past several months. Offsetting any possible decline in the fields which have not yet reached the absolute settled stage, there is the probability of some little additional development work at Dominguez, together with increased production in several fields resulting from the use of improved pumping equipment and the employment of better production methods. Particular attention is directed to the reference just made to improved production methods, heretofore employed only in a small measure as far as California is concerned. Those anticipating smaller production from California during the balance of 1926 might do well to consider the possibility of stimulating production by artificial means and, although the writer is not yet in a position to state just what might be expected from this source, this is a tip to watch Huntington Beach, Dominguez, Richfield and Fullerton during the next three or four months.

Shut-in Production

The shut-in production at the present time is approximately 54,000 bbls. daily, the greater part of which is comparatively heavy oil in the Coalinga, Kern River, Midway-Sunset, Elk Hills, Lost Hills, Belridge, Santa Maria and Coyote Fields. The 1,900 wells affected will probably remain shut down during the next several months, although they may be opened up late this year or early in 1927. The status of this curtailed production depends to some extent upon the amount of cracking which will be done late this year and also upon the amount of development work which might be undertaken in the newly opened Poso Creek area and operations in any other new field developed during this period. The decline in Pacific Coast stocks during the month of April aggregated 8,608,951 bbls., 8,214,864 bbls. of which was due to the three fires of the Union and Standard Oil Companies. The net decline in the total fluid stocks is therefore 394,087 bbls., exclusive of the fire loss at Brea, San Luis Obispo and Kern River.

Long Beach

The completion of two good flowing wells in the northwest extension of the Long Beach Field during the past week has centered the attention of operators upon that area because of the possibility of early deep zone development. Drilling work and completions heretofore have seemed to indicate that the McKeon zone would not be commercially productive because of the inability to shut off water and the small amount of oil sand present. This view was shared by many and the effect of deep zone production was considered as nil. If the two completions just chalked up is any criterion as to what may be expected from deeper drilling, the field production will undoubtedly register a general increase during the next 60 days and in view of the fact that there are already approximately 25 wells on the way down to the pay it is quite likely that their completion will be reflected in the field output within the next several weeks.

In view of the limited amount of data available, it is impossible to even venture an estimate as to what effect this deep drilling will have on production, although several optimistic operators are inclined to think that it will result in an increase of approximately 25,000 bbls. a day. This opinion is not based on the results attained to date but is simply predicted upon the fact that there should be 50 or more new wells or deepened projects finished in the deep sand within a comparatively short time. It has not been absolutely determined how thick this new producing horizon is, although all the wells finished up to the present time indicate that it is not over 100 feet. It is quite similar to the upper sand in this respect and it will probably show other similar characteristics. The writer is of the opinion that this new deep drilling will result in a slightly higher production during the next few months but that the new wells finished will not push the total field production much above 125,000 bbls. a day at the most.

Early Flush Production

It is quite likely that deep sand drilling will be a repetition of what has recently taken place in the upper zone development in that the early bird will get whatever flush production is available while those who follow later will get pumpers instead of flowing wells, many of which will never pay out. A 100-foot sand will not permit or sustain town lot drilling but the amount of work already under way indicates that no thought is being given to the ecnomic spacing of wells or the ultimate recovery from this thin zone. The Julian Petroleum's No. 1 fee and George F. Getty's No. 16 Cerritos just finished will undsubtedly prove quite a stimulant and result in the decision of a considerable number of operators to engage in deep drilling if finances allow them to pursue this course. The former well, drilled to 4,825 feet and finished with a 4½-inch liner, came in flowing 1,168 bbls. of 22.5 gravity oil daily, while the latter started off doing 737 bbls. of 21.8 gravity oil from 4,849 feet. It is quite possible that these two new deep zone producers will hold up fairly steady for some time but it is a foregone conclusion that they will drop off very substantially as soon as other wells in the immediate neighborhood begin drawing on the same source of supply. Both are at present showing a good gas pressure and the output is not cutting in excess of 3 per cent.

May Have Drilled Too Deep

Nard & McNeece have had their No. 1 Cerritos, a deep zone well, on a production test for several days and, while it is flowing 400 bbls. from 4,879 feet, approximately 40 per cent of the output is water. It looks as though these two operators have drilled into bottom water and will be obliged to plug back. The Wilshire's No. 1-C Los Cerritos is also showing a heavy cut and it looks as though this company will have to follow a similar procedure. The Wilshire is drilling five other potential deep sand producers, while the Julian Petroleum has 10 wells now producing in the upper sand which can and probably will be deepened in the near future. E. E. Coombs is finishing what should prove to be a fairly good well and, inasmuch as he has contented himself with a 75-foot penetration, he stands an excellent chance of securing clean production. If other operators follow a similar procedure instead of trying to drain the field they will undoubtedly find it mutually profitable. A. J. Delaney decided on an 80-foot penetration in his No. 16 Cerritos and the prospect of securing clean production at 4,865 feet is quite good. Unless mechanical trouble develops, the Gem Oil Co., Lacey & McLaughlin, McKeon Oil Co., Ozark Oil Co., R. J. Rhea, the Robertson company, Sharp & Reddick and Walter P. Temple should be in a position to make a further test of this deep McKeon zone soon.

Harry E. McAdams completed a 165-bbl. pumper when his No. 2 Cerritos was put on the beam in the upper sand at 4,420 feet, the oil testing 21.6 degrees and showing a cut of 3 per cent. The Julian Petroleum's No. 1 Royce was also an uuper zone completion, pumping 130 bbls. of 21.2 gravity oil daily from 4,480 feet. No. 1 Bixby of the California Petroleum, east of the northern part of the northwest extension and outside the proven limits of the field, has just passed the 4,500-foot level and, inasmuch as there have not been any showings of importance, the outlook is not any too favorable.

Dominguez

The Shell recompleted No. 27-A Reyes in the Dominguez Field during the early part of the week after cleaning it out to bottom, 4,075 feet, and it was returned to production doing 230 bbls. daily. The company also finished No. 101 Reyes, which is a five-spot well, at 4,150 feet, but it was not actually put on production. It will undoubtedly be given a test during the coming week and if a natural flow is secured it will be allowed to remain on production for a short time in order that the hole will be in good shape before conservation measures are undertaken. The Union has four drillers in this field in addition to several clean-out jobs, but, in view of the fact that work is going along slowly, it will be another few weeks before the company will be in a position to finish any additional wells. During April there were only three new wells finished in the Dominguez Field and this limited amount of development work has resulted in a gradual settling of the total field production. The output has been averaging around 21,000 bbls. daily for the past several months and will probably continue to hover around this mark for some little time to come, unless further work is undertaken, although the contemplated improvement in production methods may even double the present output.

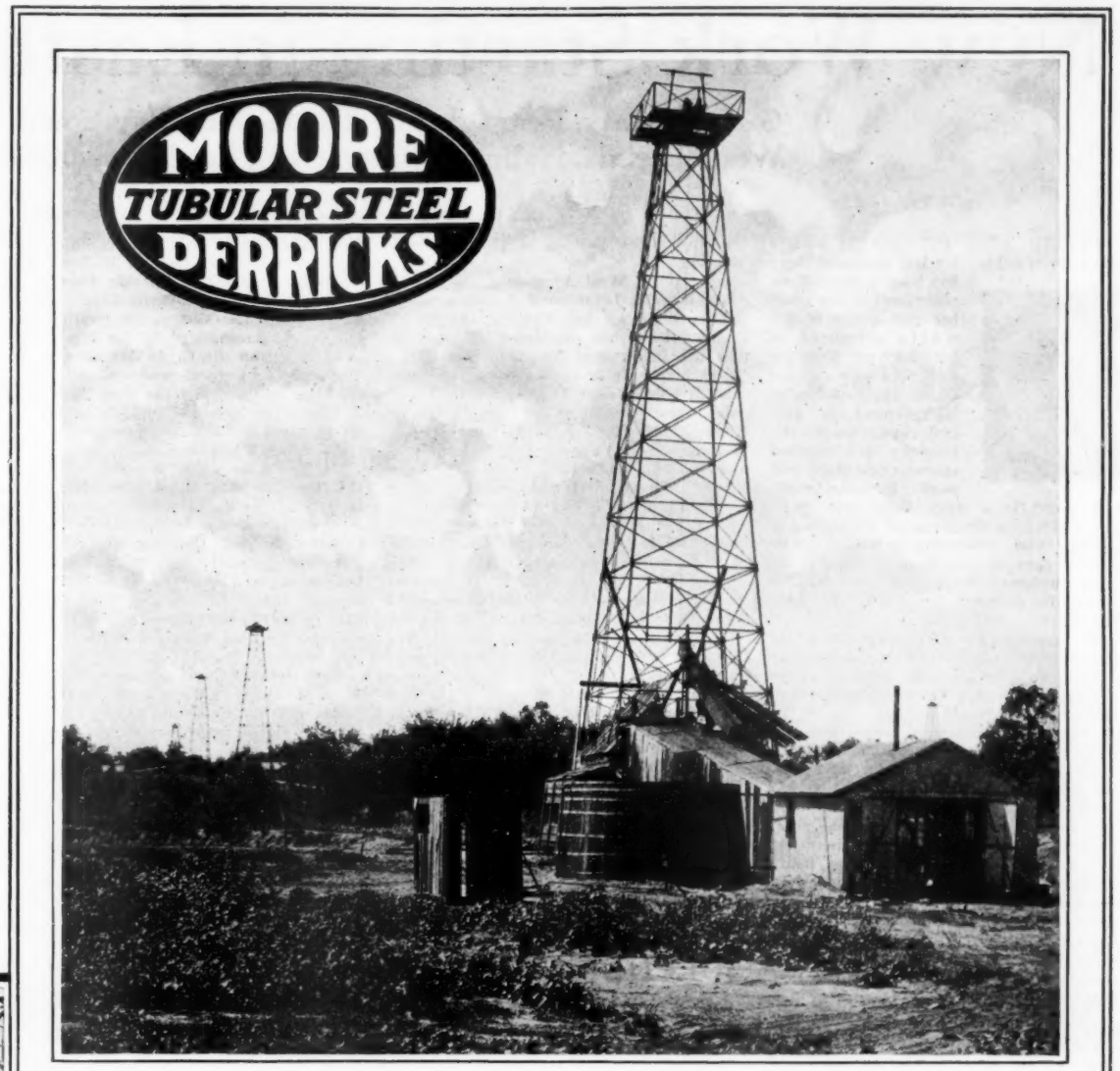
Rosecrans

There were only two small wells finished in the Rosecrans Field during April and as a result of this limited amount of work the total field production declined to 18,052 bbls. daily, a loss of 2,300 bbls. per day. The only new well added during the past few weeks was the Barnsdall's No. 10 O'Dea, which has just come in flowing 860 bbls. of clean 40.8 gravity oil from 4,288 feet. The Union and Barnsdall are the only companies doing any new drilling in this field and, although the former will probably not add any new wells to its list of producers within the next few weeks, the Barnsdall should be in a position shortly to finish two more wells on the O'Dea lease. These potential producers are No. 11 O'Dea now at 4,300 feet and No. 12 on the same lease at 4,120 feet, both of

(Continued on Page 129)

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total This week	Daily Average	Total Last week	Daily Average	This year To date	Same time Last year
Fuel and gas oil	274,046	39,149	76,139	10,877	3,821,773	237,875
Gasoline	402,351	57,479	86,502	12,357	2,702,759	2,026,274
Tops	.....	.....	.....	.....	74,619	160,730
Coastwise—						
Crude oil	627,461	89,637	658,605	94,086	9,739,147	11,595,377
Fuel and gas oil	137,024	19,575	71,528	10,318	3,418,866	4,644,259
Gasoline	246,351	35,193	146,380	20,911	3,950,285	1,932,379
Kerosene	10,602	1,515	.....	.....	166,870	128,167
Tops	.....	.....	50,626	7,232	390,446	62,970
Exports—						
Crude oil	106,149	15,164	243,358	34,765	1,884,325	964,162
Fuel and gas oil	595,080	85,011	315,290	45,041	6,565,190	5,788,249
Gasoline	65,211	9,316	.....	.....	2,013,819	1,458,729
Tops	.....	.....	.....	.....	.....	170,407
Kerosene	57,108	8,158	.....	.....	815,126	746,938
TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC, GULF COAST PORTS						
Fuel and gas oil	82,183	11,740	.....	.....	441,360	.....
Gasoline	.....	.....	.....	.....	592,094	332,906
Tops	.....	.....	78,614	11,231	229,775	544,254
Lubricants	.....	.....	.....	.....	154,088	159,968
Coastwise—						
Fuel and Gas oil	169,715	24,245	203,645	29,092	2,033,501	1,482,823
Gasoline	189,639	27,091	132,516	18,931	1,618,832	1,132,607
Kerosene	30,050	4,293	14,869	2,124	183,949	119,037
Exports—						
Fuel and gas oil	63,009	9,001	.....	.....	1,400,093	773,421
Gasoline	80,880	11,697	.....	.....	616,058	260,968
Kerosene	.....	.....	.....	.....	699,092	352,431
Lubricants	.....	.....	.....	.....	.....	243,602



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New Work Starting in Eastern Fields

Green County, Pennsylvania, Ritchie and Clay Counties, West Virginia, Holmes County, Ohio, Lead Development

By D. S. Wakenight
Staff Correspondent, Eastern Fields

PITTSBURGH, Pa., May 31.—Since the eastern fields were last reviewed there has been a decided improvement in the number and size of the wells completed in both West Virginia and southeastern Ohio. The belief in an improvement in general conditions in the industry has inspired operators to start new work. In some localities there is a very little test work starting in the hope of finding some strictly new producing territory. The greater part of this kind of work is located in lower West Virginia counties, where the untested areas look the most attractive.

The gas companies are going far afield and may possibly uncover a new pool of oil or gas. In the old fields the gas companies are not quite so active and holding in abeyance the development of territory in which they have been operating for many months. In the old districts there is still a lot of territory that has not been closely drilled.

An advance in the market is the thing most needed at this time to revive operations in old districts, in which there has been nothing doing for a great many months. Greene is the only county in southwest Pennsylvania that shows any considerable number of wells drilling and starting. Ritchie and Clay Counties in West Virginia, and Holmes County in southeastern Ohio are leading in new work.

Best Completions for the Week

There were a few better than average producers completed during the week and the most of them in the deep sand territory in southeastern Ohio. However, West Virginia had the largest well and the best for more than a year. It is L. N. Rinehart & Co.'s second test on the Curtis Mitchell farm, on Meadow run of Goose Creek, Grant district, Ritchie County. The well produced 310 bbls. the first 24 hours after drilled into the Big Injun sand pay. In the same locality, the South Penn Oil Co. got a 30-bbl. producer in the same formation at No. 3, on the Barbara Jamison farm. This seems to be a narrow streak running east of the old development. This well produced more oil than all others completed during the week in the West Virginia fields.

In the list of better-than-average wells completed in the southeastern Ohio fields, the Pure Oil Co.'s No. 3, on the Carnot Miller farm, is the best. It is in Section 18, Prairie Township, Holmes County, and produced 135 bbls. the first 24 hours after drilled through and shot in the Clinton sand.

In Section 10, Perry Township, Licking County, the Hope Construction & Refining Co.'s No. 3, on the Frank Phillips farm, produced 105 bbls. the first 24 hours after shot in the Clinton sand. In the northwest quarter of Section 28, Coal Township, Perry County, the Chartiers Oil Co. got a 55-bbl. producer when it completed and shot in the Clinton sand No. 199, on the Hocking Valley Products Co.'s property.

Fair Shallow Sand Producer

In the southwest quarter of Section 28, York Township, Morgan County, the Sun Oil Co. completed and shot in the Berea grit No. 18, on the C. E. Swytzer farm. It produced 40 bbls. the ensuing 24 hours. This well is in the best Berea grit pool discovered in southeast Ohio in a number of years. This pool and the deep sand territory has for a long time been furnishing the major portion of the new production.

West Virginia

In the Big Injun sand development in Henry district, Clay County, the South Penn Oil Co. has completed and shot in the Big Injun sand No. 4, on the R. F. Kyle farm. It is estimated to be good for 25 bbls. a day. On the Little Kanawha River, Sherman district, Calhoun County, the Hope Natural Gas Co. has a gasser good for 250,000 feet, at a test on the John Fogle farm.

Duster in Wood County

In Williams district, Wood County, in the Big Injun Pool, the Grant Oil Co. and Reed & Athey completed another test on the George Henrie farm. It is a duster in the first Cow Run sand. In Center, district, Wetzel County, the Hope Natural Gas & Refining Co. completed in the Gordon sand a test on the O. W. Yeater farm, showing for a 20-bbl. producer.

Lewis County

In Courthouse district, Lewis County, Roy R. Horner completed in the Gantz sand a test on the Mary V. Horner farm. It is a duster. In the same district, the Duncan Oil & Gas Co. has a light gasser in the Gantz sand at No. 3, on the H. H. and E. Duncan farm. In Collins Settlement district, the Petroleum Star Co. and Clayton have a fifth sand duster at a test on the Dora Linger farm. In Courthouse district, the Hope Natural Gas Co. has a bad hole and skidding the rig at a test on the Patrick Malley farm.

Good Producer in Ritchie County

On Meadow run of Goose Creek, Grant district, Ritchie County, the South Penn Oil Co. has completed in the Big Injun sand No. 5 on the Clyde Atkinson farm. The well is a natural producer and places 95 bbls. to its credit the first 24 hours. The location is in the vicinity of the L. N. Rinehart & Co.'s good producer.

Harrison County

On Ten Mile Creek, Ten Mile district, Harrison County, the Clifton Oil Co.'s No. 3, on the J. J. Williams farm is a good gasser in the Maxon sand. In McClelland district, Doddridge County, the Carnegie Natural Gas Co. has the rig completed for another test on the Ruth Shrader farm. In Grant district, Pleasants County, the Dividend Oil & Gas Co. has the rig completed for a test on the Graham heirs' farm.

The Heck Oil Co. has completed No. 3, on the J. W. Conley farm, located on Seaman Fork, Reedy district, Roane County, and a natural producer good for 10 bbls. a day in the Berea grit. This location is 1,200 feet northeast of the first test on this farm.

On Breeden Creek, Harvey district, Mingo County, A. B. McGrew, Jr. has completed No. 11 on the Closterman estate and dry in all sands. This well was drilled 100 feet below the Berea grit. On the waters of Mud River, Carroll district, Lincoln County, the Transylvania Petroleum Co. has completed in the Berea grit and shot a test on the B. T. Maddox farm. It is 2,200 feet southwest of the same company's test on the Charles Millen farm and is a gasser good for 1,700,000 feet. On the same stream, and in the same locality, the Transylvania Petroleum Co. has started to drill a test on the C. Gillenwater farm.

Marshall County

In Liberty district, Marshall County, the Decem Development Co. has drilled down to the Gordon sand an old well on the Robert M. Bonar farm. It is good for 25 bbls. a day. In the same district, L. F. Burley & Co. have a gasser good for 1,000,000 feet in the Big Injun sand at a test on the Maley-Newman farm. On Little Grave Creek, Washington district, Ervin T. Wood and others have started to drill a test on the Edward Newman farm. On Fish Creek, Liberty district, the Manufacturers Light & Heat Co. has the rig completed for No. 3 on the Phillip Thomas heirs' farm.

In Ten Mile district, Harrison County, Worthy Marsh has a show for a light pumper in the Gordon sand at a test on the F. M. Haney farm. In Sardis district, Hoffmier & Deegan have a 5-bbl. pumper in the Gordon sand at a test on the W. A. Rogers farm.

In Walker district, Wood County, the Four S. Oil Co.'s second test on the John Lenhart farm is a 3-bbl. pumper in the Maxon sand. In Union district, Lincoln County, the United Fuel Gas Co.'s test on the J. W. Dingess farm is a gasser in the Berea grit. In the same district, the Union Oil & Gas Co. has a gasser in the same formation at a test on the Burton Breedlove farm.

Tyler County

In Lincoln district, Tyler County, L. L. Gorrell's No. 3, on the Uriah Kimble farm, is a gasser showing some oil in the Big Injun sand. In the same district, Morgan Brothers have a gasser in the same formation at a test on the Belle Willis farm.

In Elk district, Harrison County, the Grasselli Chemical Co. has a fifth sand gasser on the O. B. Thornberry farm. In the same district the Hope Construction & Refining Co. has a fair gasser in the Speechley sand at a test on the Marshall Martin farm. In Sardis district, Garrett & Lyons completed a Gordon sand gasser on the M. A. Dennison farm.

Marshall County

In Liberty district, Marshall County, the Hope Construction & Refining Co. has drilled in a test on the C. E. Yeater farm. After standing 48 hours the hole filled up 300 feet with fluid from the Gordon sand. In the same district, the Carnegie Natural Gas Co.'s No. 3, on the L. E. Conaway farm, is dry in the Gordon sand.

Wetzel County

In Church district, Wetzel County, the S. H. Stockdale Oil & Gas Co.'s test on the William Hixenbaugh farm is a gasser in the Big Injun sand. In the same district, the Manufacturers Light & Heat Co. has a small gas well at a test on the W. E. Johnson farm, in the Gordon sand. In the same district, the Hope Natural Gas Co.'s test on the William Himelrick farm is a gasser in the same sand.

The Federal Oil & Gas Co. has completed in the salt sand No. 31 on the Roberts, Pell and Newman tract, in Spring Creek district, Wirt County, good for 5 bbls. a day. On Indian Creek, Clay district, Monongalia County, the Red Fork Oil & Gas Co. has completed and shot in the Bayard sand a second test on

(Continued on Page 121)

SULPHUR CREEK WELL, KENTUCKY, MAKING EIGHT BARRELS AN HOUR

By Whit
Staff Correspondent, Kentucky-Tennessee

WINCHESTER, Ky., May 31.—The bringing in of a 192-bbl. well at a depth of 837 feet on the M. E. Coop farm, in the Sulphur Creek Field of Cumberland County and the fine showing made in the Anderson sand in a wildcat on the H. Flint lease, in White Bottom, same county, were the features of the western Kentucky division during the week. In the eastern division average wells were in vogue, the best being reported being on the Lyons lease in the North Weir Field, of Lawrence-Johnson Counties at around 20 bbls. each and in the Johnson-Magoffin Counties 15 bbls. was the best reported.

The recent advance of 20 cents in the Somerset light and Somerset medium crudes by the Cumberland Pipe Line Corp. and the Paragon Development Co., and a 25-cent raise by the Indian Refining Co. in Warren, Allen, Simpson, and the Owensboro district of the western division, should bring out the operators that have been quietly awaiting for an advanced market. Now they have got it, with prospects for further increase, and should get busy. Heavy rains during the past week delayed the completion of a number of wells in most all fields of Kentucky as well as Tennessee.

In the western division work is pretty well scattered, with Cumberland and Adair Counties, Barren County and the Owensboro district taking the lead. In the eastern division the Swiss Oil Corp. is doing a large amount of development work in the North Weir Field of Lawrence and Johnson Counties, while the Petroleum Exploration Co. is planning additional development work in the Big Sandy division as well as in the Lee-Owsley areas.

Week's Work

During the week a total of 33 completions were reported in the Kentucky end of the Kentucky-Tennessee Field, 24 being oil wells with a flush of 567 bbls., and 9 dry holes. This is an increase from the previous week's figures of 7 completions, 2 additional oil wells, 335 bbls. more flush production, while in dry holes the increase was 5. These wells were distributed among the various counties of Kentucky, as follows:

	Comp.	Wells	Prod. Prod.	Dry
Cumberland-Monroe ..	6	2	360	4
Lawrence-Johnson	5	5	65	0
Estill	5	3	15	2
Johnson-Magoffin	4	4	22	0
Morgan	3	3	15	0
Owensboro District ...	2	1	40	1
Barren	2	1	7	1
Wayne	2	1	1	1
Warren	1	1	25	0
Lee-Owsley	1	1	3	0
Allen	1	1	2	0
Powell	1	1	2	0
Total	33	24	567	9
Last week	26	22	232	4
Difference	7	2	335	5

Eastern Division

In the eastern Kentucky division but little work is reported outside of the Lawrence, Johnson, Magoffin, Wayne, Lee-Owsley, Floyd-Knott. Estill and Morgan Counties with a few scattered developments in Elliott, Menifee, Knox Laurel, Jackson and Greenup Counties. Very little work of a wildcat nature is being done at this time due to the late rains that makes it hard to get around in the hilly country and to ford the streams.

Little trouble prevails from the moving of materials in parts of the North Weir Field, as the bulk of the development is being done by the Swiss Oil Corporation which carries a heavy stock of material at its several stock rooms over its large holdings in the Ayresville area.

In District 22-A, of Lawrence-Johnson Counties, the Swiss Oil Corp.'s Nos. 28 and 29 Sanford Lyon lease, are estimated at 20 bbls. each; No. 31 Jess Lyon farm, 10 bbls., and No. 13 Martha

(Continued on Page 122)

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Central West Reports Good Wells

Roundhead Pool, Hancock County, Ohio, Friendsville Field, Illinois, Have Better Than 50-Bbl. Producers

By Whit
Staff Correspondent, Central West Fields

FINDLAY, Ohio, May 28.—The completion of a good well in the Roundhead Field of Hardin County, in the Lima Field, on the Stodler lease; a 60-bbl. completion in Marion Township, Hancock County, on the Donhoff Brothers farm; another 20-bbl. pumper on the Ernest farm, in McLean Township, Shelby County, were the week's features of the old Lima Field of northwestern Ohio.

The bringing in of a 25-bbl. well in the corporate limits of Saginaw, Mich., and farthest south well in the new field has brought a town lot leasing campaign.

A 25-bbl. well in Bear Creek Township, Jay County, and a renewal of development work in the Trenton Rock area of Eastern Indiana, and the finding of a 25-bbl. producer in Logan Township, Pike County, in the southwestern Indiana area, should bring about more new work in both fields.

The well on the J. O. Woods farm, in Friendsville Township, Wabash County, is rated better than 50 bbls. and is an offset to the discovery well on the Bass lease and the starting of a real wildcat venture in Edwards County, to the northwest of Grayville and almost due south of the Wabash County pools, were the Illinois features for the week.

In the Central West Field for the week, combining the above along with the Central Ohio Field, there were 27 completions, 5 dry, 2 gas and a flush of 406 bbls. There were 40 old wells abandoned in the Lima Field.

Lima Field

Donhoff Brothers got quite a surprise in their No. 16 well on their own farm, on the map as the J. A. Oberholtzer farm, Section 1, Marion Township, Hancock County. This well struck the top of the Trenton at 1,189 feet and at 120 feet in to a total depth of 1,309 feet a heavy dose of salt water was found with the coloring of oil. The well was tubed and put on the pump with a view of exhausting the water and for eight days the well pumped a steady stream of salt water when it went onto oil and the following seven days' pumping brought forth 60 bbls. daily of good oil and holding up remarkably. This well is on what is known as the "Sucker Rod or Hogs Back" strip that runs from east of Findlay, through Hancock, Wood and Lucas Counties and across the southeastern corner of Michigan, passing through Monroe County into Ontario, Canada.

In the Roundhead Field of McDonel Township, Hardin County, the Cockley Oil Co. drilled in an excellent producer in No. 1 in the southwest corner of the Floyd C. Stodler farm. This well was pumped for six hours putting 53 bbls. in tankage and the second pumping brought forth 40 bbls. in four hours, the well not being pumped off and estimated at better than 60 bbls. settled. This field is to get a good play and leasing has been done south into the Belle Center area in Logan County. The Roundhead Oil & Gas Co. is drilling No. 7 on the Erwin Hites farm, in McDonel Township, Hardin County, while the Boston-Southwestern Oil & Gas Co., as well as Sanford, Ulrich and others, are getting busy.

Shelby County

In McLean Township, Shelby County, one of the new southerly points of the Lima Field, L. T. McGrath has finished his second well, 760 feet from the south line and 200 feet from the east line of the Henry Ernst farm, Section 9, and a location north of No. 1, same farm. No. 1 was also a 20-bbl. pumper, meaning that the wells are of commercial size. Top of sand at 1,264 feet and oil at 60 feet in. The sand was found 5 feet higher in No. 2 than in No. 1. No. 3 is drilling on the same lease. Slagel & Johnston are drilling a well close by on the Ex. Eilerman farm, same section. The Wittmer property trustee, on the G. B. Gaier farm, Section 10, only pumped 1 bbl. and Milleck and others are drilling a test on the Jane Ernst farm, same section.

In Cynthian Township, Shelby County, Lee A. Watson's No. 5 well, 600 feet from the south line and 100 feet from the west line of the J. H. Borhorst farm, Section 34, pumped 5 bbls. Sand topped at 1,254 feet and drilled 51 feet in the sand. The Ohio Oil Co. is drilling a second well on the Thresa Goffena, Section 35. Lee A. Watson is drilling No. 1 on the J. Monnin, Section 34, and E. E. Laughner is drilling his third venture on one of the Thresa Goffena farms, same section. Eilerman Oil Co. is starting No. 1 on the F. Borchers, Section 26, and the Wittmer property trustee is starting No. 3 John Zimmerman, Section 15. The Fort Laramie Oil & Gas Co. abandoned No. 4 Frank Danzig, Section 16, and now drilling No. 6 on the same farm.

Mack P. Colt and others brought in a 10-bbl. well at No. 8 on the J. E. Pierson farm, Section 18, American Township, Allen County, just out of Lima. In Bath Township, same county, C. A. Peavey and others are drilling No. 4 S. H. Vore. O. T. Botkins and others are doing the same at No. 3 on the P. D. Driver, Section 12, and Geselchen and others are drilling No. 5 William Lenney, same section. In Spencer Township, same county, the Gwinn Oil Co. and others are working at No. 6 John A. Beerman, Section 23 and the South Fork Oil Co. is drilling No. 4 Ed Reynolds, Section 27.

In Center Township, Mercer County, Mack P. Colt and others, second test in the northwest corner of the Henry Wurster, Section 9, is an 8-bbl. pumper, with sand struck at 1,122 feet and drilled 50 feet in. The Ohio Oil Co. is drilling No. 2 James M. Nolan, Section 3, and N. E. Master is drilling No. 4 Charles Nolan, same section. D. A. Miller and others are drilling No. 4 on the Hacker heirs, Section 33, Jefferson Township, northwest of Celina, while in Recovery Township, Sam W. Tate, Jr., is drilling No. 3 Rose Fecher farm, Section 24.

In the Elmore Field of Harris Township, Ottawa County, the Zorn- Hornung Co.'s No. 14 well, 500 feet from the north line and 250 feet from the west line of the E. W. Yeasting, Section 17, pumped 8 bb's. from a total depth of 1,340 feet, or 50 feet in the sand. The Ohio Oil Co. is drilling No. 14 on the J. H. Bergman farm, Section 19, and the Burman Oil Co. is working at its second test on the H. W. Nieman, Section 23.

Logan County Test

G. L. Schumacher and others are reported to be drilling an important test on the Mack farm near Belle Center, in Logan County, south of the Roundhead production in Hardin County. Much leasing activity has been going on in that vicinity.

An important wildcat venture is being made by the Detriot & Cleveland Oil & Gas Co. on the William Russell farm, Section 4, Jackson Township, Paulding County. New work will soon start up in both the oil and gas area in the Payne Field of this county.

In Scott Township, Sandusky County, Harley, Henderson & Warner are starting No. 4 on the W. O. Doll, Section 35. In Moulton Township, Auglaize County, I. C. Robison is drilling a test on the A. Sillin, Section 14, and the Kelly Oil Co. is drilling a second venture on the J. H. Harshbarger, Section 10. In Salem Township, same county, the Bachelor Oil Co. is drilling No. 10 on the W. T. Seibert, Section 7.

In Hancock County, Portage Township, the Ohio Oil Co. is drilling No. 12 on the John E. Moorehead north farm, Section 22 and No. 9 on the C. L. Turley, Section 27. Stitt & Sawyer are working at No. 6 on the William Sawyer, Section 12, Liberty Township. In Allen Township, the Peter J. Poole estate, is drilling No. 12 Hy. Franks, Section 7. The Ridge Oil & Gas Syndicate is drilling a test on the L. Wonders, Section 35, Biglick Township. In Orange Township, the Ohio Oil Co. is drilling No. 12 A. E. Lugabill, Section 4, and in Eagle Township, Fuller and others are drilling No. 20 Jacob Fellers, Section 7.

In Lake Township, Wood County, near the big well recently found by Lantz, Schulty and others, Charles F. Zeising and others have started a test on the Andrew Gensen, Section 26. In Perrysburg Township, the Oko Oil & Gas Co. is drilling No. 4 Louisa Deverna and No. 6 George Deverna farms, Section 29. In Section 28e, of Middleton Township, same county, Otto A. Brown is drilling No. 7 Frank Rogers farm. In Liberty Township, Hulse & Kundtz are working at a test on the E. E. and J. H. Abbott farm, Section 3, and the Ohio Oil Co. is drilling No. 11 Royal B. Mercer farm, Section 11. Same company is drilling No. 44 on the Franks, White & Hamman farm, Section 21, Henry Township.

Wells Abandoned

A total of 40 old wells are reported abandoned in various parts of the Lima Field. In Wood County, Plain Township, the Ohio Oil Co. abandoned Nos. 3, 9, 10, 20 and 21 George W. Hartman, Section 27. Same company did likewise with No. 18 John Marshall, Section 15 and No. 12 Jacob Neier, Section 10, Henry Township. In Bloom Township, the same company abandoned No. 14 John Smith. In Liberty Township, the Ohio Oil Co. pulled out Nos. 3, 10, 11, 12, 13, 14, 15, 17 and 20 G. Otterback, and Nos. 1, 5, 8, 9, 11, 13 and 16 John Miller, all in Section 26.

In Liberty Township, Hancock County, S. E. Price abandoned old No. 4 on the T. H. Barnhill, Section 11.

In Marion Township, Allen County, Mack P. Colt abandoned Nos. 1, 2, 3, 4 and 5 Brenneman & Huber farm, Section 12.

In Noble Township, Auglaize County, the Ohio Oil Co. pulled out old No. 5

(Continued on Page 128)

EIGHT PRODUCERS IN MICHIGAN HOLDING UP PRODUCTION VERY WELL

By Whit

SAGINAW, Mich., May 29.—The sixth completion of the Saginaw Prospecting Co., its No. 1 on the Northmoor subdivision to the City of Saginaw at its north end, was the first completion to be made within the city limits since many years ago. The top of the Berea grit was found at 1,821 feet and drilled 11½ feet in the sand to a total depth of 1,832½ feet, where is was given a shot, and is reported to show for around 25 bbls. It is an offset a trifle to the southwest of the discovery well drilled by this company last fall. Its location is at Weiss and Delaware Streets. This makes six wells drilled by this company and all proved commercial producers which is quite a record for a new field, especially in a State where no oil was supposed to be found. Two other producers have been brought in. One by the Sun Oil Co. and one by the Bliss Petroleum Co.

Crowds of people by auto were out to see the Prospecting Co.'s well shot and regardless of the drizzling rain, they stayed it out, but were not able to see much of a flare, as the shot was not large enough to bring much from the bottom of the hole and an elbow to deflect the flow was at the casing head.

Hardly a day passes but what oil and gas leases are left for record at the office of Miss Elizabeth B. Hesse, register of deeds.

The Saginaw Prospecting Co. has three strings of tools at hand, two of which are running and the other will soon be at work. The Sun Oil Co. has three strings and two of them running, while other tools are moving in. The Bliss Petroleum Co. has been delayed in its test to the north of production by fishing and other troubles. This test is on the Boldebuck 160 acres, nearly 2 miles north of the discovery well.

The Sun Oil Co. encountered a fishing job in the Marshall formation in its second well and is down around 500 feet at its No. 3, both wells being in Section 11, Saginaw Township. The Bliss Petroleum Co.'s well on the Boldebuck lease also got its fishing job in the Marshall sand at 690 feet where it was delayed for several days before recovering them. The Bliss Co. is starting its No. 2 on the Fred Engle farm, Section 10, and a mile west of the Sun Oil Co.'s Weiss farm well; one-half mile north and 1 mile west of the discovery well.

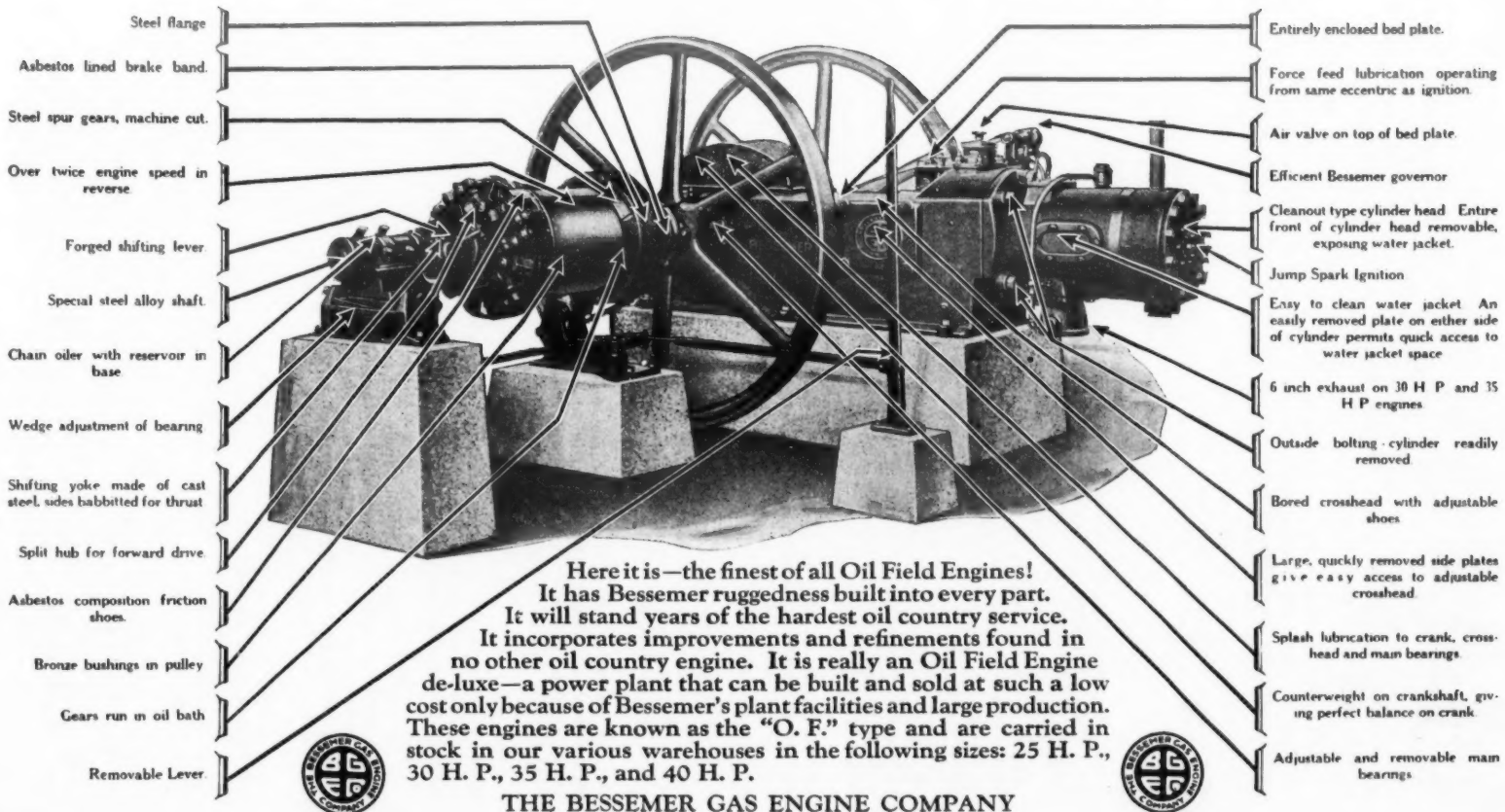
The wells in the field so far as development has gone are holding up very good and gradually drop to from 7 to 20 bbls. daily from their initial production.

Glenn R. Wilson has made a location for his first venture just east of Oakley Street, between Weiss and Reed Streets. A boiler and some supplies are already on the ground.

The Gardner Petroleum Co. of Tulsa, Okla., and the Shaffer Oil & Refining Co. have made a location on their block of 2,000 acres adjoining the City of Saginaw on the southeast. Rig is building on the Henry Schwannecke farm, SE cor. NE, of Section 33-12-5e, Saginaw Township. Tools and casing are on the ground. This is a play for an extension of the Saginaw Pool to the southeast beneath the city, the present production being at the northwest edge of Saginaw, with one well in prospect as stated by Glenn Wilson and others within the city limits on Oakley Street. Should the Gardner-Shaffer well be a producer it will show that the city of Saginaw is situated directly on the pool.

The Saginaw News-Courier has this to say of a well known company: "That another big outside oil producing company is looking with favor upon the prospects of the Saginaw Oil Field was indicated when representatives of the Ohio Fuel

(Continued on Page 126)


Steel flange
Asbestos lined brake band.
Steel spur gears, machine cut.
Over twice engine speed in reverse.
Forged shifting lever.
Special steel alloy shaft.
Chain oiler with reservoir in base.
Wedge adjustment of bearing.
Shifting yoke made of cast steel, sides babbitted for thrust.
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Bronze bushings in pulley.
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Easy to clean water jacket. An easily removed plate on either side of cylinder permits quick access to water jacket space.
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MEN KNOWN IN OILDOM

C. K. Clark

Charles Kelly Clark, president of the Standard Oil Company of Louisiana and familiarly known in practically every field in the continent as "Cal," has served 40 years under one industrial flag. His career in the quest of flowing gold is one of the most picturesque of leaders in the petroleum industry.

Starting as a common laborer at the age of 20 with the National Transit Company, in two score years he has served the industry he has climbed to the top of the company which he has served for the past years. Probably no man in the industry has a more intimate and extensive knowledge of the petroleum industry. In his years of work in the oil industry he has been brought in intimate touch with almost every phase of it.

He was born in Coolville, Ohio, May 19, 1865, and attended Thiel College at Greenville, Pa. After leaving the Transit Company, he went to the Southwestern Pennsylvania Pipe Line Company, as gauger and from there to the Buckeye Pipe Line Company, as oil purchasing agent, connection foreman and gauge supervisor. For seven years he was district foreman of the Eureka Pipe Line Company, and in 1902 he was made superintendent of the George A. Burt Company, in charge of pipelines.

In 1909, he came to the Standard Oil Company of Louisiana as superintendent of the pipeline department and was made manager of the pipeline and production departments in 1912. In May, 1919, he was selected to head the Oklahoma Pipe Line Company, and was made vice president of the Standard Oil Company of Louisiana, in December of the same year. February 15, 1926, he was elevated to the presidency of the company. His duties have led him into almost every field in the United States.

Having earned a rest and retirement he chose work and added responsibility in accepting the new post.

PERSONAL PARAGRAPHS

S. B. Sargent, of the Sargent Engineering Corp., has been visiting the oil fields in Arkansas.

* * *

S. F. Shaw, air and gas lift engineer, is engaged in the Braman, Tonkawa and Garber fields.

* * *

Dr. R. H. Cunningham, electrical engineer, has joined Eisemann Magneto Corporation engineering staff.

* * *

W. G. Cummings, of the Gas Engineering & Construction Company of Tulsa, is in Texas for a brief visit.

G. L. Nagel, of the Hill-Hubbell Company of San Francisco, has returned to the Pacific Coast after a visit to Tulsa, Okla.

* * *

Eugene F. Connors, vice president of the Independent Oil & Gas Company, is inspecting the Texas properties of his concern.

* * *

Charles Lupton, discoverer of Cat Creek Field in Montana, has returned to South Dakota and is doing considerable geological work.

* * *

J. R. Stoltze, assistant sales manager of the Crystal Oil Refining Corporation, Shreveport, La., is on a business trip to Chicago.

* * *

Dr. J. A. L. Henderson, of London, England, sailed for Canada on professional business, for a probable absence of some months.

* * *

Earl F. Allen, district sales manager in the Mid-Continent Field for the Central Steel Company, is making a trip in the Texas oil fields.

* * *

E. P. Brown and F. K. Ovitz, of the Standard Oil Company of Indiana, have been spending some time in the Mid-Continent oil fields and refining centers.

* * *

W. M. Welch, consulting engineer of Tulsa and former vice president and general manager of the Tidal Refining Company, is on a business trip in Montana.

* * *

Dr. R. Kettner, professor at the Czech Technical College at Prague, has been appointed to the chair of geology at the Mazaryk University, Bruenn, Czechoslovakia.

* * *

E. DeGolyer, president and general manager of the Amerada Petroleum Corporation, has returned to New York after a visit to the Oklahoma and Texas oil fields.

* * *

J. M. Sands, of the Bartlesville offices of the Phillips Petroleum Company, is visiting the Montana and Canadian fields on his way home from the Texas Panhandle.

* * *

E. C. Pulley of Kansas City, Mo., is spending a week in Tulsa, Okla. He has had the advantage of a varied experience in the fields of the United States and in Mexico.

* * *

H. D. Fletcher, assistant manager and field superintendent for Apex (Trinidad) Oilfields, Ltd., has sailed for England on a four months' vacation. Mrs. Fletcher and children accompanied him.

* * *

C. W. Kerr, vice president of the Ohio Oil Company, in charge of the Louisiana-Arkansas district, is making an inspection tour through the fields before returning to his headquarters in Marshall, Ill.

* * *

R. W. Carroll, old time oil well supply man and later a producer, has been spending the winter in West Palm Beach, Fla. He expects to leave for Bowling Green, Ky., where he is interested in production with his brother, Ion Carroll.

* * *

Dr. Joseph B. Umpleby, Oklahoma City geologist and oil operator, recently returned from Pennsylvania where he is engaged in oil field restoration work. He made a tour of the Texas Panhandle while in the Southwest.

* * *

Wallace R. Finney, superintendent of the gas department of the Midwest Refining Company, has gone to California where he will spend a week visiting with his parents. He drove to Rawlings where he took the Union Pacific for the coast.

* * *

Dan J. Moran, superintendent of the producing department of The Texas Company, with headquarters at Houston, Tex., was a recent Wyoming visitor, inspecting the local refinery and also looking over the company's holdings in the fields in this vicinity.

* * *

R. M. Smith, general manager of the E. J. Miley Company, is expected at Aztec, N. Mex., from California to take charge of the company's drilling operations in that section. The Miley Company has holdings in the Bloomfield, Blanco and other fields.

R. A. Josey, president of the Josey Oil Company, Tulsa, has been looking over the north Texas fields extensively.

* * *

J. A. Stokes, general manager of Kern Trinidad Oilfields, Ltd., is in the Maracaibo district of Venezuela, looking into the possibility of that company obtaining concessions there. Mrs. Stokes and Mr. Strickland, the company's geologist, accompanied him.

* * *

Vance Rowe, one of the few remaining early day scouts in the Rocky Mountain region was a visitor in Casper, Wyo., recently. Vance is with the Carter Oil Company, and during the early days of the boom period in Wyoming oil, made up one of the baker's dozen of oil scouts who helped make history in the Rocky Mountain region.

* * *

R. S. Hutchinson of Oshkosh, Wis., newly elected director of the New York Oil Company, and A. G. Setter of Cattaraugus, N. Y., director of the company, have just completed a visit to Casper, Wyo. Mr. Hutchinson is secretary for about a dozen companies controlled by Emil H. Steiger.

* * *

S. H. Keoughan, president of the Continental Oil Company, has returned to Denver after an inspection of the Rattlesnake and Table Mesa wells on the Navajo Reservation, all of which were drilled by the Continental Company, which is laying a 94-mile pipeline from the field to Gallup.

* * *

T. S. Hogan, former United States Senator of Montana, and oil operator in the Montana, Wyoming and Mexico fields, was in Amarillo recently looking around with a possible eye to operations. Mr. Hogan is carrying on operations in the State of Coahuila, Mexico, and was returning to Mexico.

* * *

L. G. E. Bignell of Tulsa, sales engineer for the Parkersburg Rig & Reel Company of Parkersburg, W. Va., is in the Rocky Mountain area superintending the erection of a heavy duty Parkersburg steel derrick, recently sold to the Texas Production Company, which will drill a deep test in the Big Muddy Oil Field.

* * *

Roy E. Collom, who was for a number of years California State Gas and Oil Supervisor, has just been elected second vice president of the Marland Oil Company of California. Mr. Collom resigned his position with the Mining Bureau about three years ago and joined the Marland Company as chief geologist.

* * *

H. G. Bode and F. DeBolt of Whittier, Calif., have arrived in Atzec, N. Mex., to look over the oil situation. They expect to remain but a few days and then return to California where arrangements will be made to commence drilling operations, after which Mr. Bode will return to Aztec and start operating on their holdings a few miles south of Aztec.

* * *

Max W. Ball of Denver, president of the Argo Oil Company, recently flew to Casper from Denver. After a day in Casper he visited Salt Creek and later Lance Creek. He was acting as guide for a Government pilot who was seeking first hand information regarding oil production from Federal owned lands. It was the oil man's first experience as a flying scout.

* * *

S. L. Theetge, president of the San Juan Land & Oil Company, and V. F. Masters, geologist, in company with C. W. Suicles of Denver, have arrived in Aztec, N. Mex. The headquarters of their land business is in Albuquerque, N. Mex., but their head office is in New York City, N. Y. They have land holdings in Colorado, Wyoming and New Mexico. Mr. Theetge expects to drill several wells in the San Juan Basin before fall.

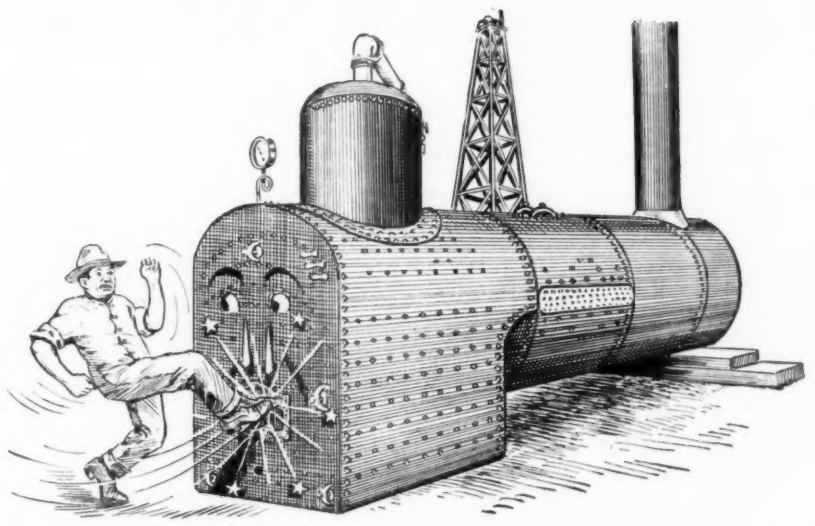
* * *

The Venezulean Oil Concessions Company and the V. O. C. Holding Company announce that G. L. d'Abo, Sir John Barran, C. E. Benson and Pierre de Gunzbourg have accepted invitations to join the boards of these companies, and that a similar invitation has been extended to Sir Charles Wright. Mr. d'Abo is managing director of Hambros Bank, and is also on the Board of Baltic and Mediterranean Corporation, Ltd., and Sir John Barran is deputy chairman of Linoleum Manufacturing, Ltd.

"OILWELL" ESTD 1862 TRADE MARK. REGISTERED

Stop

"OILWELL" ESTD 1862 TRADE MARK. REGISTERED



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NATURAL GAS DEVELOPMENTS

CONSERVATION ORDER ON PANHANDLE GAS

AMARILLO, Tex., May 29.—Declaring use of gas to "lift" oil from 300 wells in the Carson-Hutchinson Field would mean a waste of 300,000,000 to 500,000,000 feet of gas daily, and that final recovery of oil will be as large or "even larger" if the gas is cen ented off, Earl Calloway and H. H. Fitzpatrick, deputy oil and gas inspectors, have served notice on operators that an order to conserve gas can be expected momentarily.

Date for a meeting, called by Judge H. E. Bell, head of the oil and gas division, has been moved up to June 2, when the problem of gas waste in drilling and producing wells will be threshed out. The expected ruling from Judge Bell, which Calloway and Fitzpatrick indicated as forthcoming at an early date, will mean the cementing of the inner string of casing, behind which is the greatest volume of gas, and which to date has been used in raising the crude in the majority of wells.

Fitzpatrick conservative'y estimates 1,000,000 feet of gas is going to waste in every Panhandle well, and estimates the field will have 300 producers by summer. Operators are aroused over the probable ruling, declaring the order would mean the placing of 85 per cent of wells in the Carson-Hutchinson area on the pump. They maintain such action would threaten continued operations and mean financial ruin to smaller operators. State laws prohibiting producing of gas and oil from the same well from different levels, and prohibiting the flowing of an oil well with gas, are being violated in the Amaril'o Field, the inspectors declared.

If mechanical means of obtaining the oil from Panhandle wells is employed instead of gas pressure, producers say production will be maintained at a material overhead cost, estimated by some at 40 to 60 cents a barrel.

Calloway did not make any specific recommendations, pending the further conference. In the meantime Panhandle operators are preparing statistics and assembling facts against the contemplated rulings. All of those present at the initial conference called by Calloway, excepting one major company, voted against the suggested ruling to cement the gas flow in producing wells. Some make the assertion the move is backed by concerns planning to pipe gas from the Panhandle Field to distant points.

Operators predicted the peak of the present producing area would be reached in September, when production should reach 100,000 bbls. To force a large per cent of wells on the pump would limit the field to a maximum output of 75,000 bbls., with 50,000 bbls. being estimated as high mark for the present summer, they hold.

CODY GAS FRANCHISE

The town council of Cody, Wyo., has granted a franchise for the distribution of natural gas in the municipality to the Rocky Mountain Gas Co., a subsidiary of the Ohio Oil Co. Work must begin on the line by September 1 and be completed by December 1, 1926. The Ohio Oil Co. is developing a supply of natural gas in the Oregon Basin Field south of Cody. The company had a franchise last year but was prevented from carrying out its part of the contract by water breaking in and ruining the big gas well.

MANAGER AT WAURIKA

L. D. Ewing, of Weleetka, Okla., has been appointed manager at Waurika of the Waurika Gas Co. This is a subsidiary of the Nocona (Texas) Gas Co., which is to distribute natural gas in the Jefferson County capital.

INDUSTRIAL POSITION OCCUPIED BY THE CARBON BLACK INDUSTRY

By Charles E. Bowles
Petroleum Analyst, The Oil and Gas Journal

Natural gas is the basic "raw material" of two industries—public service gas companies (and the industries which they serve) and carbon black companies.

Of course there are substitutes for natural gas as a source of light, heat and power—and for carbon black as pigment. The coal, coal oil and lampblack industries are all older than the natural gas and carbon black industries.

But for domestic purposes, and for certain industries, natural gas is so ideal and the carbon black made from it is so far superior in the manufacture of printer's ink and rubber tires—that it is only natural that public service companies shou'd oppose, in a general way, the burning of natural gas to make carbon black. The case stands "Light, Heat and Power vs. Pigment."

In 1924 the carbon black industry occupied the following "statistical" position in the natural gas picture:

	Cubic Feet
Used for drilling, etc. in field	393,437,000,000
Used by domestic consumers	285,152,000,000
Used for carbon black	156,514,000,000
Used for other industries	306,379,000,000
Total consumed	1,141,482,000,000

Expressing the above in terms of percentages we have:

	Pct.
Used for drilling, etc	34.5
By domestic consumers	24.9
For carbon black	13.7
By other industries	26.9
Total	100.0

It is interesting to note that about 25 per cent of the total consumption of natural gas was for domestic purposes—and that the carbon black industry, with its 69 plants, used over half as much natural gas as was used by the 3,443,000 domestic users.

Relative Value

A further comparison between the domestic use and the carbon black plant reveals a very striking "relative value"—

Used by domestic consumers cubic feet	285,152,000,000
Value at point of consumption	$154,000,000
Used by carbon black plants, cubic feet	156,514,000,000
Value, at plant, of carbon black	$11,565,000

This comparison is essentially unfair to both the public service gas companies and the carbon black manufacturers unless full consideration is given the wide difference in the relative investments in the two industries, in the overhead expense, in the value to other industries of carbon black, and to numerous other angles, a fair weighing of which brings the two foregoing widely divergent "values" very much closer together.

From the standpoint of the modern printing press there is no present substitute for carbon black—and in the making of automobile and truck tires today carbon black is so far superior to anything else that is commercially available, that it is really impossible to use a "dollars and cents yardstick" in drawing a comparison between the two industries.

It is undoubtedly true that, in a broad general sense, natural gas, properly used,

(Continued on Page 81)

GAS MEN GO UP IN THE AIR

During the recent convention of the Natural Gas Association of America in Tulsa, the airplane of the Gas Engineering & Construction Co. entertained visitors by carrying them over the Tulsa territory.

The picture shows a group who have just finished their flight. From left to right they are: John W. Crowe, superintendent of the Chestnut & Smith gasoline plant at Kiefer, Okla.; Charles F. Spinney of the Graham Bolt & Nut Co. of Pittsburgh, Pa.; John Glass, of the Carnegie Natural Gas Co. of Waynesburg, Pa.; S. E. W. Burnside, Hope Natural Gas Co., Pittsburgh, Pa., and O. K. Shannon, manager of the Fort Worth Gas Co. of Fort Worth, Tex. The guiding spirit of the flights was Pilot Woodring, of the Gas Engineering & Construction Co.

The flights were made upon the invitation of the genial "Bill" Cummings, and the most enthusiastic passenger was Kelly Shannon, who has resolved that aviation is conducive to splendid health.

CARBON BLACK AT SAN JUAN

A miniature carbon black manufacturing plant was taken into the San Juan Basin of northwestern New Mexico recently by Victor Cotner, of New York, connected with the Binney & Smith carbon manufacturing company, to test the natural gas being produced there. Samples of carbon made from gas from the well of the New Mexican Eagle Oil Co. in Coots Canyon were sent to New York. The well was capped several months ago. Cotner is said to have found on opening it that it has a rock pressure of 300 pounds.

MAKING ADJUSTMENTS TO USE NATURAL GAS

HOUSTON, Tex., May 29.—More than 10,000 business houses and homes have been visited by crews from the Houston Gas & Fuel Co. making adjustments for natural gas. Adjustments in business houses have been completed and crews were sent to the residential districts. Each day the workmen grow more proficient, and during the last few days they have been able to make more than 2,000 calls a day. All of the adjustments can be completed within the allotted 30 days.

Since natural gas has been turned into the city mains, the purchase of new stoves and other gas appliances has been increased. Many people waited until natural gas reached the city before buying new stoves, and others are using gas for the first time.

PROTESTS RATES ON PIPE

WASHINGTON, D. C., May 29.—A complaint of the Lone Star Gas Co. filed before the Interstate Commerce Commission against Atchison, Topeka & Santa Fe Rai'road and others, attacks as unjust and unreasonable rates on wrought iron pipe and fittings between points in Ok'ahoma and Texas, especially Corsicana to Healdton, Burkburnett to Healdton, Comanche, Okla., to Desdemona, Tex., Mineral Wells, Tex., to Healdton and from Brazos, Tex., to the same point. Complainant asks for the application of the Memphis scale or such other rates as the commission may deem just and reasonable and for reparation. The complaint covers shipments moving between February 1 and May 5 of the present year.

FORT SMITH GAS RATE

FORT SMITH, Ark., May 29.—A hearing of the case in which the Twin City Pipe Line Co. attacks gas rates fixed in Fort Smith as confiscatory is to be held June 17 before J. V. Walker, special master. The company a few months ago applied to the city commission for an increase in rates and the matter went into court upon refusal of the commission to grant the order. The court granted a temporary order fixing a rate of 15 cents per 1,000 cubic feet at the gate. This was an increase of 5 cents but was not as much as the company contended for.

GAS FOR MARSHALL, TEXAS

MARSHALL, Tex., May 29.—Walter H. Sedberry, manager of the Commercial Natural Gas Co., says the company has all the 6-inch pipe strung along the right of way and will begin ditching, welding and covering from a point 3½ miles south of Marshall from its main from the Waskom Field to Tyler to South Marshall. This line will soon be in readiness to put gas into this city. Hallville will be the next point to which a 6-inch line will be extended.

MEDFORD GAS CHANGE

WICHITA, Kans., May 29.—O. J. Parkhurst of Guthrie and J. J. McNeill of Cushing have become new owners and sole stockholders in the Hoy Oil & Gas Co. of Medford. Several Medford men were stockholders in the company which was organized nearly two years ago for the purpose of distributing gas in Medford. Parkhurst will be general manager. He formerly was connected with gas distribution concerns at Hominy, Tulsa and Cushing. Parkhurst has been engaged in similar work at Guthrie.

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Above is shown a typical pipe yard at one of the CONTINENTAL branch warehouses, indicating the immense stocks of Youngstown Pipe held available by us at all times within reach of every oil field.

YOUNGSTOWN Drill Pipe, Casing, Tubing, and Line Pipe are produced by the largest independent manufacturer of pipe in the United States, and represent the highest value the market affords.

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CONTINENTAL

EQUIPMENT AND SUPPLIES

RAIL RATES ON PIPE FOUND UNREASONABLE

By Charles E. Kern

Washington Bureau,
The Oil and Gas Journal

WASHINGTON, D. C., May 29.—In the case of the Lone Star Gas Co. against the Chicago, Rock Island & Gulf Railway Co. and others, a report is proposed to the Interstate Commerce Commission by W. R. Brennan, examiner, holding that rates on wrought iron and steel pipe and fittings in carloads from points in Oklahoma to points in Texas are unreasonable and reasonable rates are prescribed and reparation awarded.

"It is the general practice of oil companies in the southwest to move pipe from one location where it has served its purpose to another where it is needed," states the report. "In nine instances the complainant was both consignor and consignee, and in the other shipment, complainant was the consignee. These shipments according to the record, moved between May 18, 1923, and February 17, 1925, over defendants' lines."

The Texas points of origin are in Texas common-point territory. The rates asked by complainant are based on the so-called Memphis-Southwestern scale. The examiner sums up his conclusions as follows:

"No showing is made herein sufficient to warrant a finding other than one similar to the finding in Texas Pacific Coal & Oil Co. vs. C. R. I. & G. Ry. Co. supra, and following that case, and on the record herein, the commission should find that the rates assailed were, are, and for the future will be unreasonable to the extent that they exceeded, exceed, or may exceed rates for like distances computed under the scale prescribed on iron and steel pipe in carloads, in the Memphis-Southwestern Investigation."

In accordance with the foregoing reparation is awarded with interest and reasonable rates are prescribed.

In another report proposed by the same examiner, W. R. Brennan in the case of the Texas Pacific Coal & Oil Co. vs. A. T. & S. Fe Railroad Co. and others, rates on iron and steel pipe in carloads from Ranger, Texas, to Ada, Bristow, Byng, Paden and Seminole, Okla., and from Jefferson, Okla., to Ranger, Texas, are found to be unreasonable and reasonable rates are prescribed and reparation awarded.

Ranger is in Texas common-point territory, 95 miles west of Fort Worth. It is served by the Texas & Pacific and the Wichita Falls, Ranger and Fort Worth. The rates in question applies between points in the northern half of Texas common-point territory and all destinations in Oklahoma.

The shipments on which reparation is asked moved between May 27, 1924, and July 9, 1925. In conclusion the examiner says:

"No good reason appears why the findings in the previous case should not be extended to these shipments, and following the findings in that case, and on the record herein, the commission should find that the rates assailed were, are, and for the future will be unreasonable to the extent they exceeded, exceed, or may exceed rates for like distances computed under the scale prescribed on iron and steel pipe, in carloads, in the Memphis-Southwestern Investigation supra."

Examiner Leo J. Flynn, in the case of the Standard Oil Co. of California, against Atchison, Topeka & Santa Fe Railroad Co. and others, found that rates on pipe on points in southbound Transcontinental Group B to Taft, Calif., are unduly prejudical. The defendant is required to remove the undue prejudice by according the transcontinental basis of rates on pipe from Group B points to Taft.

New Catalogs

The following catalogs, folders and booklets have been received:

"The De Laval Method of Purifying Transformer Oil and Switch Oil," by the De Laval Manufacturing Co., of Poughkeepsie, N. Y.

"The Portable H-H Inhalator," a leaflet describing a device for treating victims of asphyxia, by the Mine Safety Appliance Co. of Pittsburgh, Pa.

The current number of the Harvester World by the International Harvester Co.

The golden jubilee number of "The Yellow Strand" by the Broderick & Bascom Rope Co., of St. Louis, Mo.

A leaflet describing "The Sence Gauger," a tank gauging device, made by the States Engineering Co. of Baltimore, Md.

"Metallic Zinc Powder as a Paint Pigment," a research bulletin issued by the New Jersey Zinc Co. This booklet was written by H. A. Nelson, M. A., and W. A. McKim, M. S.

Bristol Tachometers for recording and indicating, by the Bristol Co., Waterbury, Mass.

Horizontal single suction centrifugal pumps, and reciprocating deep well pump heads, by the Dean Hill Pump Co., Anderson, Ind.

"Where and How to Use Quigley Acid-Proof Cement," by the Quigley Specialties Co., 26 Courtland St., New York City.

Erie Ball Engines, by the Erie Ball Engine Co., Pittsburgh, Pa.

Butler Super-Dura delivery cans, by the Butler Mfg. Co., of Kansas City, Mo.

NEW WESTINGHOUSE BUILDINGS

PITTSBURGH, Pa., May 29.—A building program, part of which is already under way and involving the expenditure of $5,525,000 for structures in seven localities, was announced by the Westinghouse Electric & Manufacturing Co. New office buildings at East Pittsburgh and Derry, Pa., are under construction and a new plant unit for light manufacturing purposes is being planned for Sharon, Pa. Additional buildings at the East Springfield, Mass., plant will be started soon and a warehouse at Detroit is being built. The George Cutter organization of the Westinghouse interests at St. Louis has a new cement pole plant under construction and the Mansfield, Ohio, works will be enlarged by the addition of a storehouse for finished products.

JOINS SALES STAFF

Edward J. Goggins who for the past four years has acted as credit manager joins the sales staff of Eisemann Magneto Corp. and will cover southeastern territory. Stephen M. Cargill, Jr., becomes credit manager. Mr. Cargill is a former credit investigator for R. G. Dun Commercial Agency.

CALGARY SUPPLY HOUSE

CHATHAM, Ont., May 29.—P. D. McLaren, formerly superintendent and manager of the Well Tool & Iron Works, Ltd., of Calgary, has entered the oil well equipment field, with offices at 814 Third St. W., Calgary.

CATALOGUE ON ALLOYS

The Hills-McCanna Co., of Chicago, Ill., has distributed a catalogue on nonferrous alloys and other products.

SUPPLY FIRMS ACTIVE AT HUNTINGTON BEACH

LOS ANGELES, Calif., May 29.—Although there have only been a few rigs erected in the new area recently opened up for work at Huntington Beach, supply houses are not letting any grass grow under their feet in establishing branch offices and warehouses in that district. The Republic Supply Co. and the United Supply Co. have already started warehouse construction and it is believed that other concerns will follow a similar procedure within a short time, or at least as soon as any considerable amount of new drilling is assured. The former's new plant is located at Seventeenth and Main, while the latter's warehouse is at Fifteenth and Palm. The United, due to the practical cessation of work at Rosecrans, is making preparations to close its warehouse in that field and transfer the personnel and equipment to Huntington Beach.

Equipment Notes

The Volz Engineering Equipment Co. of Los Angeles, Calif., has established an office at 2719 Houston Ave., Houston, Tex., in charge of S. O. Hale.

—

The Pennsylvania Engineering Works of Newcastle, Pa., has distributed a folder entitled "Welded Steel Equipment." The folder describes the company's facilities for welding and the underlying principles of this growing line of industry.

—

The Republic Flow Meters Co. of Chicago, has distributed a bulletin called "Steam Economy." This work is a compilation of the experience of the company's engineers over a period of ten years.

—

E. M. Mitchum representing the Dearborn Chemical Co. has been transferred to the south Atlantic division with headquarters at Atlanta, Ga.

—

The Continental Supply Co. has opened a branch store at Coleman, Tex. The store will serve the developments around Santa Anna, and also the new Gwinnup Field.

—

The executive offices of the Barnsdall Corp. have been moved to 120 Broadway, New York City.

MADE CHIEF ENGINEER

The Sullivan Machinery Co. announces the appointment of Charles B. Officer, hitherto assistant to the president on engineering matters, to the position of chief engineer of the company in charge of engineering matters with regard to the new machinery or changes in existing designs.

WATER SOFTENER BULLETIN

"Graver Zeolite Water Softener" is the title of a new bulletin published by the Graver Corp., East Chicago, Ind. The bulletin is illustrated both with views of installations and of the softener and equipment.

FEATURES OIL SAVER

The Huffman oil saver is featured in a folder issued by the L. C. Camblin Co. of Tulsa, Okla.

TAKES OVER HEETER LINE

F. M. Crowell Co., Inc., of Tulsa, has taken over the Mid-Continent distribution of the C. M. Heeter & Sons Co., of Butler, Pa., manufacturers of packers, swabs and oil field specialties.

REPRESENTATIVES NAMED IN TWO FOREIGN FIELDS

New service representatives have been appointed in foreign fields to take charge of the servicing of Regan Forge & Engineering Co.'s products. Joseph Regan recently made a special trip to Mexico for the purpose of making the appointments. Joe Allen of Tampico has been placed in charge of the work of that field. Mr. Allen was formerly associated with the Lucey organization and a number of other companies and more lately with the Republic Supply Co.

The second appointment was that of Ben Johnson to represent the Regan organization in the Maracibo-Venezuelan fields. He will make his headquarters at Maracaibo but will travel throughout the Central American oil fields.

Announcement is also made that the complete distribution of all Regan products will hereafter be made by the Regan Sales Co., a subsidiary of the Regan Forge & Engineering Co., the entire stock being owned by the officials of the latter organization.

HANDBOOK ON WIRE ROPE

How to measure wire rope—how to and how not to uncoil or unreel wire rope—how to make an endless splice—how to properly seize rope—how to correctly socket wire rope—how to care for wire rope when both in and out of service, are a few of the things told in the new 88-page handbook on wire rope recently issued by the American Cable Co., New York. In addition to such information, there is shown by detailed drawings, the best methods for making equalizing slings, bridle slings, and other miscellaneous sling and fitting equipment. There also appear briefened, though complete, treatises on wire rope lubrications, the effect of heat on wire rope performance, alignment, reverse bends, fleet angle, idle ropes and other such subjects.

NEW PUMP STATION

LOS ANGELES, Calif., May 29.—The pipeline department of the Pan American Petroleum Co., operating a 10-inch line from the Elk Hills field to the company's Watson refinery near Los Angeles Harbor, is completing a new pump station in Tejon Canyon near the General Petroleum Corp.'s pump station in order to facilitate the movement of oil over the Tehachapi Mountains. The initial Pan American station is on Buena Vista Lake bed just northeast of Taft, the second station being at the foot of Grapevine Pass on the Ridge Route. The third station is needed to boost the long gravity run to the Los Angeles Basin.

HOLD SALES SCHOOL

The Link-Belt Co. of Chicago, Indianapolis and Philadelphia, has adopted the policy of holding annual sales schools. The most recent of these schools held at the Indianapolis plants composed of 30 salesmen from the company's offices, was addressed by George P. Torrence, general manager of the Ewart and Dodge plants; James S. Watson, manager of the Dodge works, "The Home of Silent Chain," and many others, including foundry heads, shop managers and metallurgical specialists.

OFFICES IN CALGARY

CHATHAM, Ont., May 29.—The National Supply Co. has opened offices at 413 Herald Building, Calgary, Alta., in charge of T. O. Renner, formerly of Shelby, Mont. Business in the Turner Valley, Irma-Wainwright and other Alberta fields will be handled from the Calgary offices.

XUM

First to the pole

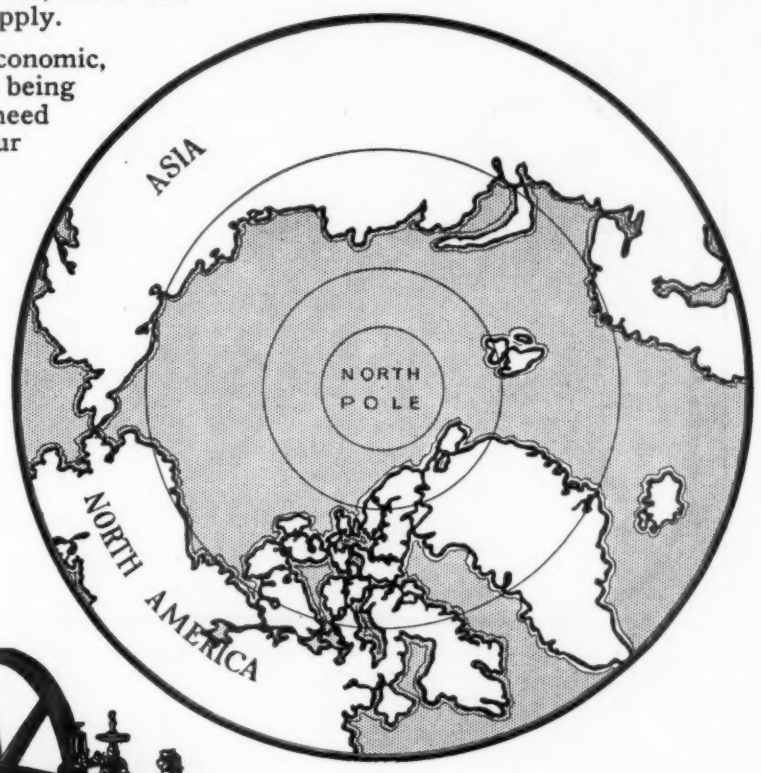
When Lieut. Commander Byrd piloted his Fokker plane across the "Top of the World" he set another record in modern progress.

He crossed the pole in his day's jaunt through the air, annihilated distance and the next day the press of the world told of his accomplishment.

He blazed a good trail. He set a new standard for the rest of us to shoot at.

We are striving constantly to set new standards in the distribution of oil field equipment. Wherever there's a demand for our service, there will you find us setting up a base of supply.

The reputation we have built for economic, instant oil field service of supply is being lived up to. It's a service that you need . . . that you appreciate . . . and your increasing use of it is our greatest compensation.



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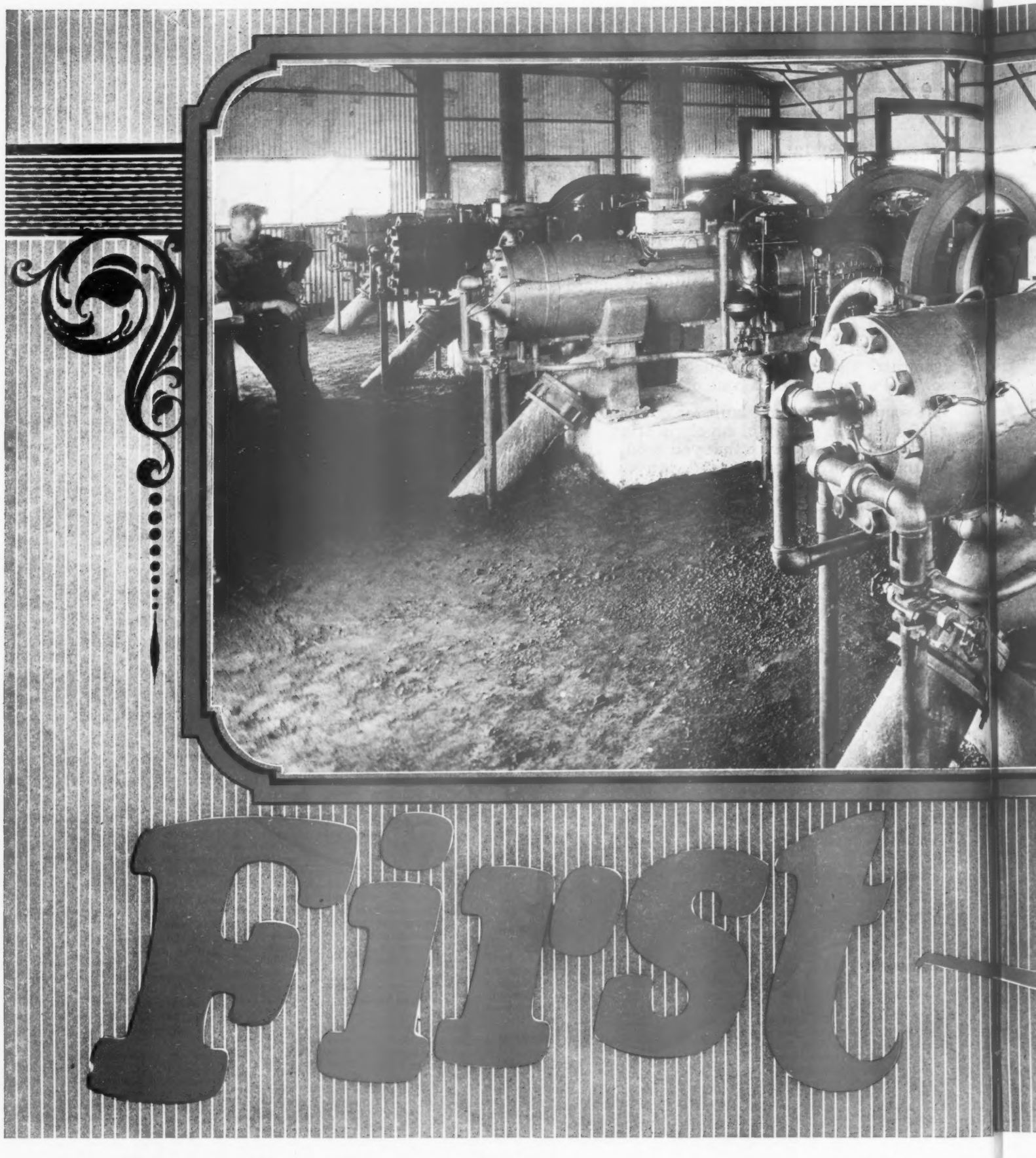
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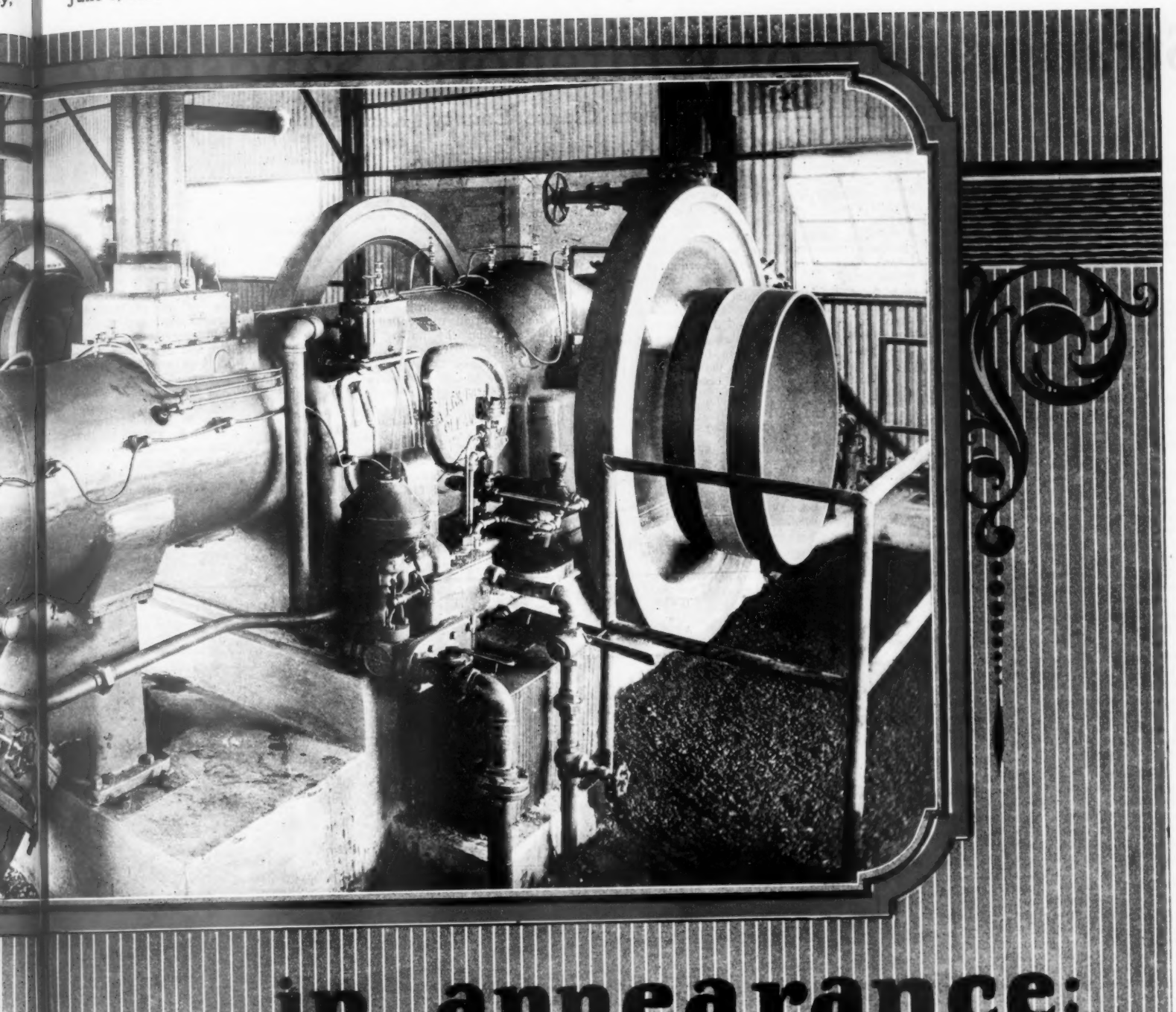

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Stratigraphy of Whitehorse Sandstone

Formation Extends From Clarke County, Kansas, Through Oklahoma and Into Panhandle Area of Texas

By R. L. Clifton*

The Whitehorse[1] sandstone, appearing at the surface over wide areas in Kansas, Oklahoma and Texas, is a persistent stratigraphic unit of the upper Permian measures. Its lithologic character and the distribution of its beds has elicited comment from geologists, whose work lay in the area of its exposures. The sandstone, presenting as it does a series of interesting geological problems, has prompted the writer to pursue at more or less regular intervals extending over a period of three years, an intensive field and laboratory study of the formation, some of the results of which are briefly embodied in this paper.

General Character

The Whitehorse formation, throughout the area of its exposures, consists of fine to a very fine-grained sandstone. The subangular grains are often intermixed with clay and silty shale, in varying proportions. Locally, beds of coarser grains may occur. In general, the cementing material of the sandstone consists of varying amounts of calcareous material and iron oxide. More often, the sandstone is poorly-cemented. For local distances the beds may exhibit a uniform stratification; more often the beds are poorly and irregularly stratified and cross-bedded to a pronounced degree. The beds, when exposed to erosional forces, weather rapidly, producing a characteristic topography. The sandstone, of supposedly continental origin, exhibits broadly a type of deposition that varies from marine-continental to continental deposits of semiarid to arid regions. The invertebrate fossils of its beds represent a marine, or brackish-water fauna.

Distribution and Correlation

The area distribution of the sandstone extends from northern Clarke County, Kansas, southward into Oklahoma, and thence into Texas to the Colorado River in Coke County. The exposures of the sandstone in a measure border the Anadarko Basin[2] in Oklahoma and in the Panhandle of Texas. From the northernmost Kansas exposure to the outcrops along the Colorado River in Coke County of Texas, it is possible to trace the sandstone in an almost continuous line of exposures. (See map.)

The stratigraphic position of the Whitehorse formation with respect to the Blaine formation[3] and the Day Creek[4] dolomite has simplified its correlation. The exposures of the Blaine gypsums closely parallel the long line of sandstone exposures. Likewise, Day Creek dolomite, for those areas in which its exposures occur, has servied as an ideal correlating horizon in tracing the sandstone. The Day Creek dolomite, however, has not been found to occur south of the Red River and its tributaries in Texas and in Oklahoma.

Important outcrops of the Whitehorse formation occur as more or less attenuated exposures back of the main line of outcrop. A chief example of such is to be observed in the Texas Panhandle. In Potter, Moore, Hutchinson and Roberts Counties, imposing outcrops of the sandstone occur along both sides of the Canadian River, where erosion has removed the younger formation, thus exposing the sandstone to view. However, it should be noted that the sandstone exposure at this locality has been correlated, previously, as belonging to the Quartermaster[5] formation, but the writer, as a result of more recent investigation has correlated the sandstone as the Whitehorse[6], instead of the Quartermaster formation.

A hard massive stratum of dolomite caps the latest of the sandstone exposures, in Potter, Moore and Hutchinson Counties, along the Canadian River, of the Texas Panhandle. This formation, which has been called the Alibates[7] dolomite, and which has since been correlated by the writer as the Day Creek[8] dolomite, instead, consists of one or more beds of magnesium-calcium carbonate.

Magnitude of Uplift

The exposures of both the Whitehorse and the Day Creek formations along the Canadian River of the Texas Panhandle, emphasize the magnitude of the Amarillo uplift, to which attention was called as early as 1907[9]. Along the uplift, the Whitehorse and the Day Creek rise at rather high angles out of the Anadarko Basin to appear as surface exposures. Failure to comprehend the magnitude of the uplift, and likewise the depression of its reciprocal—the Anadarko Basin—has caused no little confusion in interpreting the regional geology of the Texas Panhandle and the Oklahoma areas to the east.

In Wheeler and Collingsworth Counties of Texas one or more series of buttes and escarpments occur as remnants or erosional products of the Whitehorse sandstone. The rocks that cap the top of these buttes and escarpments consist of highly indurated and calcareous sandstone, which in places are highly fossiliferous. The fauna of these beds is comparable with the fauna that has been collected from the sandstone exposures at the type locality in Woods County, Oklahoma. It should be stated in this connection that the sandstone exposures at this locality, as well as those to the south, in part, have been referred to the Quartermaster formation, instead of the

Areal extent of the Whitehorse sandstone

*Abstract of a paper read before the American Association of Petroleum Geologists, Wichita, Kans.

[1]Gould, C. N., Geology and Water Resources of Oklahoma; U. S. Geological Survey, Water Supply Paper, 148, 1905.

[2]Gould, C. N., A New Classification of the Permian Redbeds: American Association of Petroleum Geologists, Vol. 18, pp. 331-341, 1924.

[3]Gould, C. N., Geology and Water Resources of Oklahoma, U. S. Geological Survey, Water Supply Paper 148, pp. 43-48, 1905.

[4]Cragin, F. W., The Permian System in Kansas: Colo. Col. Studies, Vol. 6, 1896.

[5]Gould, C. N., Geology and Water Resources of the Western Portion of the Texas Panhandle, U. S. Geological Survey, Water Supply Paper, 191, 1907.

[6]Clifton, R. L., Bulletin, Okla. Acad. Sci., Vol. 5, p. 153, 1925.

[7]Gould, C. N., Water Supply Paper, 191, Loc. cit.

[8]Clifton, R. L., Correlation of the Whitehorse Sandstone; Bul. Okla. Acad. Sci., Vol. 5, p. 153, 1925.

[9]Gould, C. N., Water Supply Paper, 191, 1907. Loc. cit.

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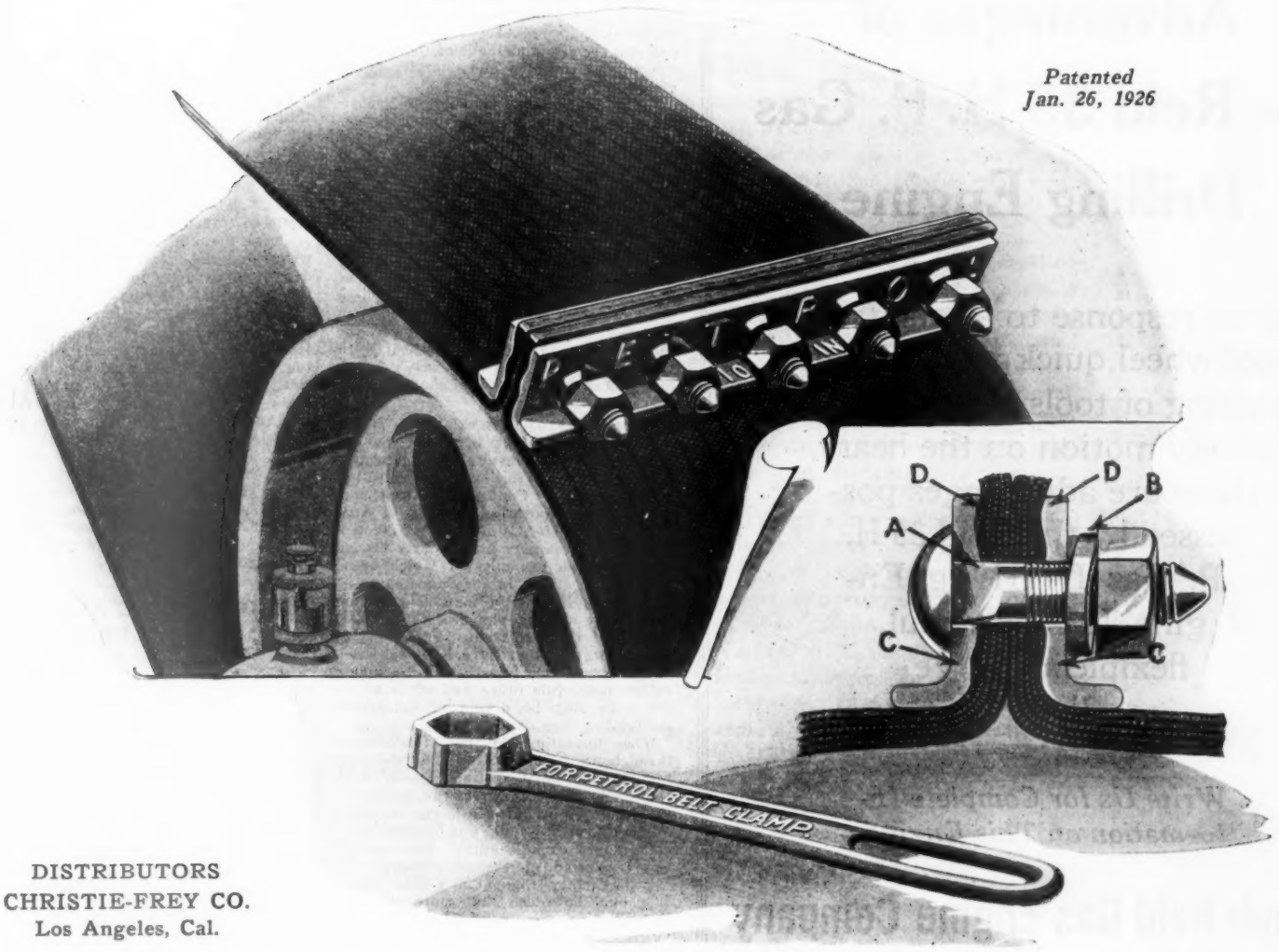

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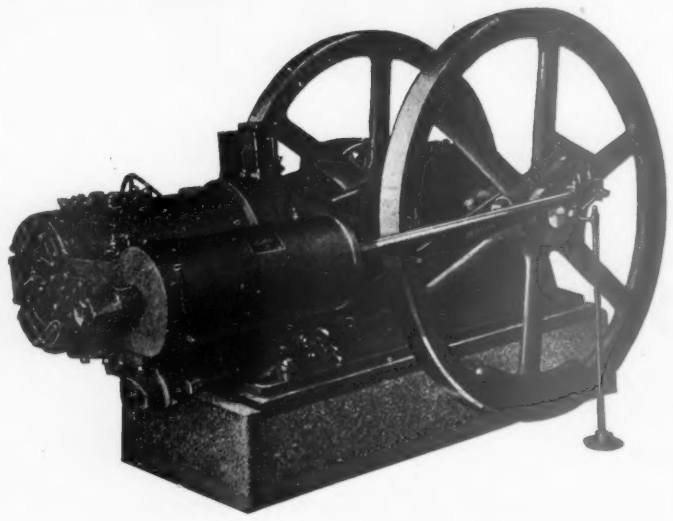

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Whitehorse. That these beds belong to the Whitehorse formation on lithologic and stratigraphic grounds, is now certain, since Gould[10] has shown that the Blaine gypsums extend as far as the Colorado River in Texas.

A short distance southeast of Amarillo, Texas, along the Prairie Dog Fork of the Red River, typical exposures of the sandstone have been observed, where the stream channels have deeply dissected the topography. Southward from this locality, beds of the Cloud Chief gypsums and the Quartermaster formation appear above the sandstone exposures.

Excellent outcrops of the sandstone are to be observed in Fisher County of Texas. These exposures, upon which the city of Sweetwater, Tex., stands, has been called the Lake Trammel sandstone by Riney,[11] Wrather and others. However, the name suggested by Gould for the sandstone has priority over the name "Lake Trammel."

Variability of the Sandstone

It is assumed that any series of clastic beds, laid down under conditions, predominantly continental in character, must exhibit a wide degree of variability. Thus the Whitehorse formation, in the present delineation of its depositional history, furnishes a record, however brief, of those physiographic changes under which its beds were deposited, and there is a variability in the sandstone, with respect to its bedding, its cross-bedding, its mineral content, the size and shape of the detrital grains, and the kind and quantity of its cementing substances.

Chief among the variable or depositional phases of the Whitehorse formation is the Verden sandstone, a channel or current deposit,[12] laid down early in Whitehorse time. The Verden phase of deposition in Stephens and Grady Counties, of Oklahoma, is not wholly analogous to other similar depositional phases, such as those that occur at the type locality in Woods County, at Dozier Mounds in Collingsworth County of Texas, and at other localities, where channel or current phases of deposition have been found to occur. However, the fauna of the Verden is identical with the faunas collected by the writer at six other localities in the Whitehorse formation.

Often the sandstone exhibits a series of beds showing but little evidence of bedding or stratification. An example of this occurs at the exposures on Bluff Creek, in Clarke County of Kansas, and again in the exposures, southeast of Anadarko, in Caddo County, of Oklahoma. Again, the beds may be regularly bedded and stratified, examples of which occur at many localities in the sandstone.

There is likewise a marked variation in the size and the shape of the detrital grains, of the formation. Variations in the mineral content have been observed. For instance, local beds may be highly calcareous, while other and often adjacent beds may be devoid of calcareous material.

The formation is not fossiliferous throughout. The writer has collected fossils from eight distinct localities in the sandstone. However, the faunas of the localities are identical, one with the other, except as to the number of species collected at each locality. More species were collected at the type locality in Woods County, than at any other place. It should be added that more intensity in collecting was applied at the type locality, which may account for the larger number from that place.

The variability of the formation is perhaps no better displayed than in the nature of its cross-bedding. At many outcrops of the sandstone, the cross-bedding shows a uniformity in direction and in the truncation of the lamina. Again, the cross-bedding may show a wide variability in direction of the cross-bedded strata. For example, at the sandstone exposures near Greenfield, Okla., the cross-bedding trends in three different directions in the same exposure. At this outcrop distinct ripple marks were impressed in the sandstone.

[10]Gould, C. N., A New Classification of the Permian Redbeds: Loc. cit.
[11]Riney, W. A., Personal Communication.
[12]Meland, Norman, Unpublished Thesis, University of Oklahoma, 1923.

Dune or wind deposits of the sandstone are to be observed in Caddo and Grady Counties of Oklahoma. Such deposits are local, and have not been observed by the writer outside of this area.

The thickness of the sandstone is likewise a variable factor. The logs of those wells that have been drilled in the deepest parts of the Anadarko Basin, show a thickness as great as 450 feet. However, the maximum thickness observed in an exposed section is approximately 285 feet. This section is to be observed in locally designated Cleveland Hills area of northern Woods County.

Origin of the Sandstone

In formulating a conclusion as to the origin of the sediments of the Whitehorse formation, the field evidences of its structural and stratigraphic relationships, including such features as the bedding, cross-bedding, unconformities, lateral gradations, and other associated characteristics, are the only valid criteria for determining the conditions under which the beds of the sandstone have been laid down. These features may give some evidence as to the method of transportation for the beds at that particular point. Likewise, these features may give a hint as to the direction of transportation.

The finer distinctions of the sandstone, such as the degree of sorting, the fineness of the sand grains, and the occurrence of characteristic minerals in the detrital materials of the sandstone, indicate a common source.

The transporting agencies to the basins of deposition have been the rivers and the rain wash. At times, heavy or torrential rains and floods, peculiar to arid regions, have served to accelerate the supply of sediments to the depositional basins. The winds may have been a means of transportation for the sediments of local areas of the formation. The waves and the currents in the basins of deposition have reworked and distributed the sediments to places of deposition.

It is concluded that the sediments for the most part came from the west, from those areas that furnished much of the sediments of late Paleozoic deposition. This conclusion assumes a land mass to the west, such as for example, the Ancestral Rockies of Lee and others. It is probable that the Wichita Mountains may have furnished a part of the sediments of the sandstone, but in view of the degree of sorting and the fineness of the sediments in the sandstone deposits nearest the mountains, it seems probable that no considerable part of the sediments came from that area.

RANDADO LINE AIDS MIRANDO PRODUCTION

SAN ANTONIO, Tex., May 31.—Production in the Mirando district in Webb, Zapata and Jim Hogg Counties will be materially increased from this on with the new Randado oil going into the pipeline. The Randado Pipe Line Co. which connects with the Magnolia's line at the Henne, Winch & Fariss Field 7 miles north and from there to Magnolia's tank farm at Oilton, started running at the rate of 1,000 bbls. a day but is now running 2,000 bbls. daily, approximately, and the Humble company which expected to have its line running early last week was expected to be in full operation before the end of the week.

Capacity of the field at this time is something less than 3,000 bbls. but additional rigs are entering the field and with less than 1,300 feet deep and the drilling easy, one rig will complete two wells a month. Twenty rigs are either on the ground or on the way and by the end of this week the number running will be considerably increased. Operators believe that by the end of June there will be 40 wells completed in the field. Added to this there is an increased activity in the Bruni tract district in Webb immediately south of the Aviators Pool and more new rigs moving in so that considerable flush production will be added there.

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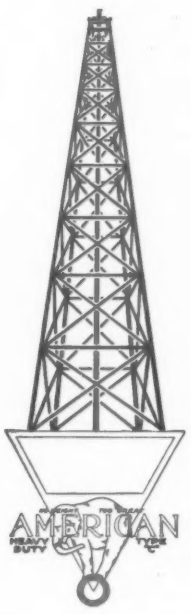

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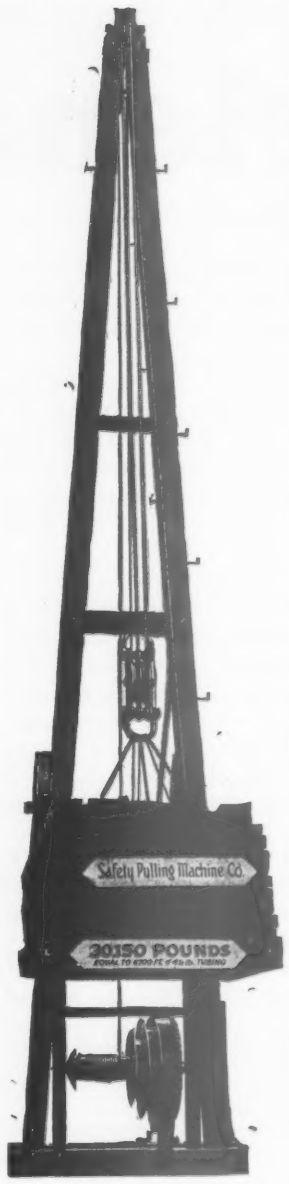

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PRESENT OPERATIONS AT TRINIDAD; GREATER ACTIVITY THAN FOR YEARS

TRINIDAD, British West Indies, May 20.—Of the many oil companies formed and operated in Trinidad only eight have survived the treachery of freak and shifting formations; and of the eight surviving companies, the Trinidad Leaseholders, Ltd., and Apex (Trinidad) Oilfields, Ltd., are the outstanding figures in production of crude; and with the exception of Trinidad Lake Co., Ltd., are the only companies on a sound paying basis, although the remaining companies are holding their own with brighter prospects for the future.

There is no little wildcatting going on on the island, and there are signs of greater activity than have been seen here in the past few years.

All of the producing sands are very shallow, ranging from 375 to 2,200 feet, and, contrary to most places, the shallower the sand the lighter the oil; the heavy gas pressure and fine shifting sands are a constant nightmare to the drilling and production superintendents. Each company has its own pet way of drilling and producing, and each seems to have its advantages.

Most of the wells are drilled in under pressure with rotary tools; the sands are not protected with a cap rock and when the drill has reached within 50 or 100 feet of the sand, the drill pipe with tool joints is laid down and a string without upset ends and tool joints is run in, with screen pipe and wash pipe at bottom, of sufficient length to take care of the sand to be encountered; a stuffing box is made up on the casing being drilled through and hydraulic inserted thread flush joint drill pipe used instead of grief stem. A "Christmas tree" with back pressure valve is used between swivel and drill pipe, a heavy clamp is placed on the drill pipe and two 5-inch back up posts placed in the rotary table does the work of the drive bushings. This is all done much more easily than it sounds, as the formation is very soft and once this arrangement is made up and run in the hole, it is not pulled out until the well is drilled in and quits flowing. The bit run in on this arrangement drills down to, and through the sand which is from 60 to 200 feet thick, and is left in the hole.

When the sand is drilled the flow pipes are connected up to the "Christmas tree" and the well allowed to clean itself and then produces through a beam. When the gas pressure goes down and the well quits flowing, the drill pipe is washed over with an 8¼-inch casing, pulled and used on other wells.

Deeper Drilling

A number of deeper wells have been drilled at widely scattered locations and good sands found below the 3,000-foot level, which proved much more treacherous than the shallow ones; the shifting formations breaking off the drill pipe and casing; and when lost can not be recovered, and very seldom touched with a fishing or side-tracking tool.

There is no doubt that large deposits of oil lie below the present producing sands, but to recover it is a problem for the oil man to figure out; and it is one that will tax his ingenuity for some time to come.

Apex (Trinidad) Oilfields, Ltd. has a nice producing field at Fyzabad, with a daily production of 3,200 bbls. It has four rotaries drilling; one a wildcat, which if it comes in will extend the field 1 mile. The Trinidad Leaseholders, Ltd. takes the production.

Orapouche Trinidad Oil Co., Ltd., which was formerly the General Petroleum Co. of Trinidad, Ltd., is operating in the same field as the Apex, and controlled by the same London capitalist. The Leaseholders Co. takes its 850 bbls. daily production. Its three rotaries are drilling on outside locations, with an indication of a jump in production at any time.

Trinidad Leaseholders, Ltd. has a 10,000-bbl. capacity refinery at Pointe-a-Pierre, and is now working on an additional 4,000-bbl. unit. It is marketing its gasoline and kerosene through the Shell Co., while the larger part of its fuel goes to the British Navy.

This company has several proven fields, but the only one of any consequence is at Fyzabad, where it has eight wells drilling with rotaries; three drilling at Barrachpore and two with cable tools at Guayaguayare; with a total production of 8,200 bbls.; Fyzabad producing practically all of its oil from a depth of 1,800 feet.

Kern Trinidad Oilfields, Ltd., this is the same as the Kern River Oil Co. of California, which is English owned, is operating at Guapo, with three strings of rotary tools, and has more than doubled its 1,000-bbl. daily production the past week, by bringing in two new wells. The United British (Dutch-Shell) takes the production for its refinery at Point Fortin.

Petroleum Options, Ltd. has a few small wells at Fyzabad, with a 150-bbl. daily production; it is not doing any drilling at present, although making preparations to install pumping equipment.

Lightest Oil on Island

Trinidad Central Oilfields, Ltd. produces the lightest oil on the island, 42 gravity, containing 51 per cent gasoline. This field is situated at Tabaquite. The sand ranges in depth from 350 to 750 feet. There has been no new drilling in this field for 18 months, although it is attempting to deepen some of the wells at present. The production of this field is estimated in gallons instead of barrels; it being 2,500 gallons a day, and run through its refinery in the field.

Trinidad is experiencing one of the worst droughts in the history of the island, and forest fires are frequent and destructive. This field suffered the loss of 10 wells from fires starting in the forest. This company has a small lease at Guapo, with a small well on it; it is also drilling two wildcats.

United British Oilfields of Trinidad, Ltd. (Dutch-Shell) has a 5,000-bbl. capacity refinery at Point Fortin, which handles its 1,000-bbl. daily production and the crude purchased from other companies. It has a small field near the refinery which has the appearance of being on its last leg as a producing field; it has two other small producing fields, and is deepening some of its wells; one field lost five wells by forest fires. It is now expected to begin active drilling soon; it uses the slush pole system almost exclusively.

British Controlled Oilfields, Ltd. has recently brought in a wildcat well of 42 gravity oil, at a depth of 750 feet, and estimated at 1,500 bbls. of pipeline oil; it is located at Palo Secco, on the property acquired from the Trinidad Petroleum Development Co., Ltd. The United British Oilfields is laying a 4-inch line to the new field; while the operating company has drilled through 60 feet of sand at 550 feet in its No. 2, with a derrick up for No. 3. It has 25 bbls. production in its old field at Oropouche and 100 bbls. south of San Fernando; besides the rotary it is running at Palo Secco, it is drilling two rank wildcats, one at Cedros, the other in the interior.

Opinions differ in regard to the new field at Palo Secco, some think it a small field of short life, while others think it has great possibilities.

Trinidad Lake Co., Ltd. has a 3,200-bbl. production near the celebrated Pitch Lake, which it put through its topping plant; and most of the products from this plant are used in the development of the Asphalt Lake and local transportation; the surplus oil being shipped in tankers to the States. It has three strings of rotary tools in operation.

The asphalt lake is the best paying proposition on the island, it being operated at a minimum expense. The asphalt is dug up with picks and carried by men and women, placed in dump cars and conveyed to vats and boiled. The

(Continued on Page 118)

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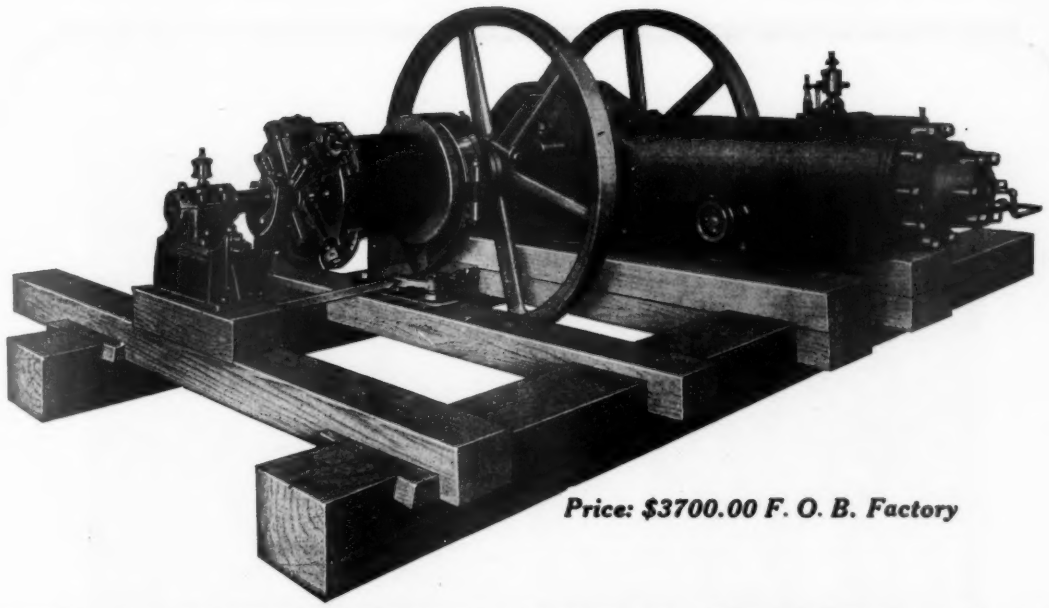

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But this impressive fact is true: Reed Rock Bits reach the peak of their popularity in fields where wells are the deepest and where formations are the hardest.

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The cross-roller action of the Reed Rock Bit Cutters, Four-Point Reamer Contact and Slush Lubrication—exclusive features developed by Reed Engineers—are the solution to the problems of rock cutting in formations a mile below the surface in the same degree as in wells of average depth.

WHO BUYS REED ROCK BITS? This, after all, is no great puzzle. Those operators buy them who consider speedy, economical and dependable performance a necessary factor of today's production methods.

Reed Rock Bits

Reed Roller Bit Company

HOUSTON LOS ANGELES

CALIFORNIA OIL FIELD OPERATIONS FOR APRIL

According to figures collected by the American Petroleum Institute, Pacific Coast office, the total production of crude oil in California for April amounted to 18,091,771 bbls., an average of 603,059 bbls. per day. This is a decrease of 4,224 bbls. per day under March production.

Total stocks of crude and all products in Pacific Coast territory decreased during the month 8,608,951 bbls. The total stocks at the end of the month were 151,811,015 bbls. The total stock decrease for 1926, up to April 30, was 5,505,294 bbls. Comparative figures as of April 30. 1926, March 31, 1926, and April 30, 1925, are shown in detail on the second page of this report.

Ninety-five wells were completed during the month with an initial daily production of 24,267 bbls., compared with 105 wells completed during March with an initial production of 23,663 bbls.

PRODUCTION

(Figures of production and stocks are in barrels of 42 gallons.)

District—	Barrels per Month	Daily Average Apr., 1926	Mar., 1926	Apr., 1925
Kern River	358,403	11,947	12,062	17,854
McKittrick	165,314	5,510	5,433	5,851
Midway-Sunset	2,827,144	94,238	93,017	101,992
Elk Hills	980,396	32,680	33,283	37,626
Lost Hills-Belridge	139,279	4,643	4,433	5,097
Coalinga	630,330	21,011	21,002	21,640
Wheeler Ridge	29,927	997	973	893
Watsonville	1,725	57	58	58
Santa Maria	148,745	4,958	5,410	7,993
Summerland	3,855	128	129	129
Ventura-Newhall	1,005,898	33,530	31,844	21,578
Los Angeles-Salt Lake	54,743	1,828	1,897	2,082
Whittier	63,916	2,131	2,190	1,995
Fullerton	539,069	17,969	18,143	11,345
Coyote	512,563	17,085	16,881	20,361
Santa Fe Springs	1,472,270	49,076	49,503	52,262
Montebello	539,768	17,992	17,696	18,874
Richfield	388,672	12,956	13,111	10,875
Huntington Beach	1,327,139	44,238	45,949	42,212
Long Beach	3,286,834	109,561	110,739	112,382
Torrance	887,120	29,571	29,234	38,417
Domingues	630,280	21,009	20,791	46,195
Rosecrans	541,559	18,052	20,301	18,117
Inglewood	1,553,696	51,790	53,790	3,597
Newport	3,126	104	128	231
Total	18,091,771	603,059	607,283	598,655
March	18,825,786	607,283		
Decrease	734,015	4,224		

STOCKS

	April 30, 1926	March 31, 1926	Apr. Stock Decreases*	April 30, 1925
Heavy crude, heavier than 20 degrees A.P.I., including all grades of fuel	‡86,291,516	‡89,237,660	2,946,144	‡63,139,602
Refinable crude, 20 degrees A.P.I., and lighter	38,393,564	43,564,186	5,170,622	44,334,413
Gasoline	11,271,718	11,116,928	†154,790	11,675,831
Naphtha distillates	5,641,183	6,339,453	698,270	6,769,291
All other stocks	10,213,034	10,161,739	†51,295	9,066,725
Total all stocks	151,811,015	160,419,966	8,608,951	134,985,862

*8,214,864 bbls. tank farm oils were destroyed by fire during April.

†Increase.

‡Includes 800,000 bbls. heavy crude oil previously reported. This represents the working stock of a pipe line company and has been a constant figure in the past.

DEVELOPMENT

District—	New Rigs Up	Active Drill'g	Comp.	Daily Initial Output	Active Prod'g	Abd. Wells Drlrs.	Abd. Wells Prdrs.
Kern River	2	8	1	150	1,593	2	...
McKittrick	1	5	...	.....	306	2	...
Midway-Sunset	8	46	12	2,212	2,932	4	1
Elk Hills	...	2	2	495	246	1	...
Lost Hills-Belridge	...	4	...	.....	296	...	...
Coalinga	1	5	5	193	980	...	1
Wheeler Ridge	1	...	1	100	24	...	...
Watsonville	...	...	...	.....	6	...	...
Santa Maria	...	6	...	.....	238	...	...
Summerland	...	...	...	.....	135	...	...
Ventura-Newhall	8	45	3	9,300	562	2	...
Los Angeles-Salt Lake	...	...	...	.....	377	...	10
Whittier	1	6	...	.....	188	...	...
Fullerton	...	16	...	.....	427	...	...
Coyote	...	4	...	.....	214	...	...
Santa Fe Springs	1	2	1	54	348	...	...
Montebello	1	12	1	50	169	...	...
Richfield	2	9	4	550	186	...	...
Huntington Beach	2	10	...	.....	343	2	2
Long Beach	11	81	52	6,458	787	4	5
Torrance	5	6	4	376	642	1	2
Domingues	3	5	3	1,365	66	...	...
Rosecrans	2	3	2	384	119	5	...
Inglewood	3	4	4	2,580	194	1	1
Newport	...	6	...	.....	11	...	...
Miscellaneous drilling	18	108	...	.....	.....	4	...
April	69	393	95	24,267	11,389	28	22
March	73	426	105	23,663	11,317	26	5
Increase	*4	*33	*10	604	72	2	17
Average for year 1925	105	417	79	42,247	11,393	28	12
Average for year 1924	103	510	103	42,412	10,903	28	21
Average for year 1923	111	759	82	114,690	8,928	24	
Average for year 1922	115	605	67	43,700	9,410	17	
Average for year 1921	90	536	57	15,631	9,425	14	

*Decrease.

POSITION ACCUPIED BY CARBON BLACK INDUSTRY

(Continued from Page 64)

is worth more than has ever been charged for it.

Invaluable Uses

And when we stop to think that practically every newspaper, magazine, book and other piece of printed matter in the world today is printed with ink containing carbon black—and that practically every black tire used on automobiles, trucks, motorcycles and bicycles, contains carbon black—and that several billion dollars are invested in the printing and rubber industries, we begin to realize that the carbon black industry occupies a much more vital position in the industrial picture than would be indicated by the $12,000,000 which represented the value, at the plants, of its 1924 output.

The accompanying table is especially interesting because it shows a remarkable expansion in the carbon black industry beginning with 1923, the year that witnessed a sudden increase in the output of crude oil, of natural gasoline and of natural gas.

Crude oil may be stored—but gas is

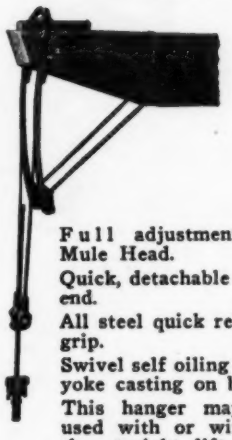
Table 1—Output and Value of Carbon Black 1919 to 1924. No Data on Carbon Black Available Prior to 1919. No Data on Stocks Available Prior to 1922. Compiled from Reports of U. S. Bureau of Mines.

Year	No. of Producers	No. of Pits.	Output Pounds	Value at Plant Total	Aver. per Lb.	Av.yld. per M. Cu. Ft. Lbs.	Est. amount of natural gas burned Cu. Ft.	Stock Dec. 31, Pounds
1919	17	36	52,057,000	$3,816,000	7.3	1.0	49,896,000,000	*
1920	19	35	51,322,000	4,032,000	7.9	1.3	40,599,000,000	*
1921	23	41	59,766,000	5,446,000	9.1	1.2	50,565,000,000	*
1922	26	43	67,795,000	5,820,000	8.6	1.3	53,629,000,000	2,435,000
1923	47	69	138,263,000	11,692,000	8.5	1.3	109,096,000,000	38,321,000
1924	46	69	186,872,000	11,565,000	6.2	1.2	156,514,000,000	95,671,000

*Not available.

Lightning Well Tools and Pumping Specialties

Wire Line Beam Hanger



Full adjustment of Mule Head.

Quick, detachable rope end.

All steel quick release grip.

Swivel self oiling steel yoke casting on beam.

This hanger may be used with or without the straight lift rope guides and is so priced.

Will handle a stroke 7 feet long.

Weight, 290 lbs.

Sucker Rod Rotator

The Lightning Rotator was designed to be used with Lightning Hanger, but may be used with almost any make of hanger. It is constructed almost entirely of steel and rotates on heavy duty ball bearing. Operates through a friction disk thereby eliminating danger of twisted rods. There are 100 teeth on ratchet so that a very small degree of turn may be made or as much as 1-16 of turn as desired. Perfect simplicity and dependability are to be found in the Lightning Rotator.

Weight, 180 pounds.

The Lightning V-Swing

Self Oiling

For heavy duty work. Weight 380 lbs.

V-Swing is adjustable so that legs may may be at 90° or closed to 45°.

Stuffing Box

Type T. S. Regular Pattern

The lightning T. S. Lubricator Stuffing Box satisfies under the most adverse conditions.

Rod and Casing Hook

Type C Grip

All-Steel Polish Rod Grips

Lightning All-Steel Grip

The most powerful all-purpose grip made. Operates like a wire line drilling clamp.

Weight 20 lbs.

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COMBINATION ENG. & COM. CO.
ALL REPUBLIC SUPPLY STORES

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HARRY B. SHINE
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Kansas City Hay Press Co., Kansas City, Missouri

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Although Plymouth Manila Drilling Cable is made with the most modern equipment available, that fact implies no cessation of the watchful care which has always been a feature of its manufacture.

Up-to-the-minute machinery merely gives even greater assurance of the accuracy of lay, the undeviating evenness of tension, which combine with its carefully selected pure Manila fiber to insure long service life.

Only experts could make Plymouth Manila Drilling Cable—and only experts are employed in its making, men who do not know how to deliver anything short of sound, honest workmanship. For supreme satisfaction depend upon Plymouth "Cordage of Character."

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"Cordage of Character"

utilized as fast as produced—and, beginning with 1923, the industries using casinghead gas and natural gas have grown remarkably, not only because there was more gas, but because other industries always show a "market response" to increased supplies of raw material.

In the four years, 1919 to the end of 1922 the output of carbon black increased from 52,000,000 pounds to 67,000,000 pounds. But in 1923 it jumped to 138,000,000 and in 1924 to 186,000,000—almost three times as much as was produced in 1922.

Today the larger part of the story of carbon black can be written around the Monroe gas field in northeastern Louisiana where over three-fourths of the United States' output of carbon black is made.

Year	U.S. output Pounds	Louisiana output, Lbs.	Pct.
1919	52,057,000	14,025,000	27
1920	51,322,000	18,565,000	37
1921	59,766,000	31,004,000	52
1922	67,795,000	41,967,000	62
1923	138,263,000	101,399,999	73
1924	186,872,000	144,602,000	77

In addition to making 144,602,000 pounds of carbon black in 1924 the plants in the Monroe gas field made 25,559,000 gallons of natural gasoline from the natural gas before running it to the burning houses. This is an average daily output of about 70,000 gallons and, as a "conservation" measure, compares with the extraction of gasoline from casinghead gas and from "still vapors" at refineries.

Practically Irreplaceable

Regardless of the attitude towards the carbon black industry of public service gas companies, of state legislatures and of that growing mass of our citizenship that are sincerely striving for a fuller industrial utilization of our natural resources, the fact remains that, for the present at least, carbon black is absolutely secure in its position in the printing and the rubber tire industries where it is today practically irreplaceable—as well as in a long list of minor uses.

Carbon black, like the "rarer metals" is to be judged, industrially, not by the $12,000,000 value of its output, but rather by what it would mean to other industries, with billions of dollars invested, if they were suddenly deprived of carbon black. The effect industrially, would be somewhat the same as if the automobiles, buses, motor trucks and airplanes were suddenly deprived of gasoline.

MANDAMUS PETITION TO COMPEL OIL GRANT

AUSTIN, Tex., May 29.—Mandamus proceedings were instituted in the Supreme Court by George W. Teissen of Houston to compel J. T. Robison, State Land Commissioner, to issue oil and gas permits for the exploitation of four sections of University lands in Block 30 of Crane County. The petitioner, through Judge W. H. Ward, his attorney, claims that the Land Commissioner has declined and refused to "grant a permit on said area applied for, and rejected the application solely upon the ground that a new leasing law of the Thirty-Ninth Legislature has repealed the old mineral law."

The application for the permit had been filed under the old mineral law which did not require the advertising of bids, on the theory that this law was not repealed by the act of 1925. The new law requires the awarding of mineral permits on competitive bids.

Judge Ward insists that should the contention of the Land Commissioner be sustained, the act of 1925 is unconstitutional and void for the following reasons: that it fails to fix the time when the leases to be authorized shall be sold; "that the act is void for uncertainty, and that the act is void because it attempts to delegate legislative powers all expressly provided to be determined and exercised by the Legislature as required by Article VII, Section 12, of the Constitution."

DECREASE IN STOCKS IN TEXAS, LOUISIANA AND ARKANSAS CRUDES

HOUSTON, Tex., May 28.—Total crude oil stocks (A and B grades) in the Gulf Coast area on May 1 were 14,545,400 bbls., a decline of 661,620 bbls. from the total of April 1.

In the southwest Texas fields the total of 990,495 bbls. in storage on May 1, was 219,155 bbls. more than on April 1.

In the north central Texas area including east central Texas, a total of 27,227,820 bbls. was recorded on May 1, a decline of 383,250 bbls. from the total on April 1.

The combined stocks in north Louisiana and Arkansas, 46,299,265 bbls. on May 1 represented a decline of 992,230 bbls. from the figures on April.

In addition to the stocks of Coastal crudes there are approximately 6,801,942 bbls. of light gravity crudes stored in the Coastal region at tank farms and refineries, a decline of 522,552 bbls. from the April 1 figures.

Southwest Texas Fields

	May 1 Barrels	April 1 Barrels
Luling	678,970	482,170
Lockhart	11,525	7,170
Mirando	300,000	282,000
Totals	990,495	771,340
Increase	.....	219,155

North and East Central Texas

	May 1 Barrels	April 1 Barrels
Eastland and Stephens	8,870,370	8,814,450
Burkburnett	245,830	459,750
Electra	274,540	221,220
Archer County	44,220	44,780
Vernon	24,700	23,185
Nocona	53,000	53,890
Mexia	11,505,700	11,241,000
Powell	6,191,000	6,703,895
Currie	5,600	6,300
Petrolia	12,860	42,600
Totals	27,227,820	27,611,070
Decrease	383,250	.....

North Louisiana and Arkansas

	May 1 Barrels	April 1 Barrels
Smackover	29,013,920	29,259,050
El Dorado	3,768,375	2,529,300
Homer	4,485,300	4,557,260
Haynesville	4,353,700	4,684,235
Crichton, DeSoto, Bull Bayou	4,050,920	5,676,050
Bellevue	180,450	225,175
Cotton Valley	330,300	340,400
Urania	116,300	20,125
Totals	46,299,265	47,291,595
Decrease	992,330	.....

Coastal Crude in Storage May 1, 1926

Districts—	May 1 Steel Tanks. Barrels	May 1 Earthen Barrels	April 1 Steel Tanks Barrels	April 1 Earthen Barrels
Sour Lake	1,511,900	1,955,500	1,471,400	2,140,800
Humble	424,200	2,133,100	677,570	2,326,600
West Columbia	1,223,400	1,130,685	1,172,625	1,135,140
Orange	194,700	952,000	151,390	1,023,675
Spindletop	1,628,570	2,125,000	1,610,965	2,140,850
Hull	242,290	60,720	340,770	60,720
Goose Creek	148,365	12,675	130,650	7,610
Pierce Junction	1,310	120,635	2,175	174,500
Saratoga	165,125	.....	169,000	.....
Big Creek	18,050	.....	24,000	.....
Jennings (La.)	106,170	.....	99,400	.....
South Liberty	20,150	.....	26,100	.....
Vinton (La.)	324,800	.....	297,575	.....
Markham	12,500	.....	11,150	.....
Batson	4,300	.....	4,000	.....
Damon Mound	4,725	.....	4,855	.....
Barber Hill	4,100	.....	2,100	.....
Dayton	300	.....	200	.....
Anse La Bute	1,000	.....	1,200	.....
Lockport (La.)	19,130	.....	.....	.....
Totals	6,055,085	8,490,315	6,197,125	9,009,825
Combined totals May 1	14,545,400	.....	.....	.....
Combined totals April 1	15,207,020	.....	.....	.....
Decrease	661,620	.....	.....	.....

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Novo crankshafts and power take-off shafts, Timken-mounted, run on bearings that do not slide, but *roll*. Thrust is also vanquished by Timken Taper, which takes endwise loads scientifically.

Here are thrust-proof, shock-proof, highly friction-free crankshaft bearings which take all the motion on hardened, ground steel surfaces. Timken electric furnaces produce this steel, the finest material for the hardest-worked spots in gas engines.

Crankshafts that run true, without main bearing knocks, for the life of the engine, are made possible. That is the meaning of "Timken-equipped" in buying a portable engine—or a compressor.

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We could talk ourselves black in the face about the mighty strength of Yellow Strand Rotary Casing Lines and nothing we could say would be as convincing as the fact that many of the best-known operators in the deep-hole rotary fields are standardizing on these cables.

If Yellow Strand did not handle heavy casing efficiently, quickly, safely, and at a low cost, these shrewd buyers would not write Yellow Strand Rotary Casing Lines into their orders time after time.

Ask for catalog K-2 and name of nearest distributor of Yellow Strand and other B & B Drilling Lines

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Mr. Hughes' Address Before Oil Board

Congress Has No Power to Control Production of Petroleum (Except on Indian Lands) Within Territory of State

Presented by Charles E. Hughes, May 27, 1926*

The action of the President in constituting the Federal Oil Conservation Board has afforded a welcome opportunity for the consideration of the problems relating to the oil industry. It has assured the conduct or this important inquiry by those who, by reason of official interest and personal ability and distinction, are most competent to prosecute it. In representing the American Petroleum Institute before this board, it gives me pleasure to assure the board of the desire of the Institute to afford a most cordial and thorough-going co-operation in its endeavor to go to the heart of these problems. In considering how that co-operation may best be given, it becomes apparent that the only assistance that would be worth while is that practical aid which lies in the effort fully to understand what the chairman has called the "national petroleum conditions," both in their economic and legal aspects, and to face squarely the facts thus ascertained. To deflect from this course, to wander in a maze of theories, however, industriously elaborated, would promise nothing but an addition to the volume of verbal futilities which burden our Governmental archives.

Those engaged in the industry, and others invited by the board, have answered the questionnaires which have been sent out, and a host of facts and opinions have been elicited. In what I have to say I shall not go into much detail, but rather I shall seek to summarize the outstanding points and to emphasize the fundamental considerations which, as it seems to me, it would be necessary to take into account in any official recommendation.

Conservation

In a general sense, it may be said that the purpose of this inquiry is to direct attention to the need and methods of conserving our oil resources. No one will question the vast importance of these resources. No one, I am sure, would dispute the desirability of conserving them. There may be in the minds of some of our people a confused notion as to what a policy of conservation really imports, but I think those who have given intelligent thought to the problems of the oil industry, and to the obvious, importunate and unceasing demands of the public, are agreed that conservation of our oil resources and products means economical use.

Estimates of Oil Supply

I shall not stop long to deal with estimates of our oil supply. **First,**—because nothing that could be said would change the different attitudes of mind toward the estimates that have been furnished to this board. After discussion is over optimists will remain optimists and pessimists will still be pessimists, and those who are neither will be criticized by both. **Second**—because the study of estimates is merely preliminary to a consideration of the available courses that are open. As we ought to be, and I believe we are, united in the endeavor to determine deliberately and dispassionately what courses are practicable, we should not have our judgment either warped by alarms or benumbed by complacency. The question of possible courses of action, in dealing with the problems which confront the industry for whose products there is a constantly increasing demand for beneficial uses, is a severely practical one and should be dealt with as such from the start. It will not be much affected by a discussion of whatever variation there may be in estimates.

*Before the Federal Oil Conservation Board, statement on behalf of the American Petroleum Institute.

HIGH POINTS IN MR. HUGHES' ADDRESS

In regard to the estimates on oil supplies provided by the Committee of Eleven of the American Petroleum Institute, whatever differences there may be as to conclusions to be drawn therefrom, it can hardly be questioned that the data were obtained by the careful study of highly qualified men.

Whatever may be said of estimates, one way or another, it will probably be agreed that the nation is not faced with the prospect of suddenly finding itself without oil. Deeper drilling, through improved drilling methods which will be perfected, will permit exploration of depths much greater than those now obtainable and may open new reserves and greatly increase supplies.

If the question be directly faced a restriction of a beneficial use of oil products produced and sold in the market, it would seem to be quite clear that any such restriction by governmental action, that is, by law, would be extremely difficult, if not impossible, to impose. Congress could not deal with the matter except so fas as interstate commerce was concerned. It is difficult to imagine a successful attempt to prevent by legislation the movement in interstate commerce of oil products for particular beneficial uses. Meanwhile, the States, respectively, would remain the judges—subject to constitutional provisions—of the policy of placing restrictions upon the use of oil products in intrastate commerce.

If the American people desire oil products which are available in time of peace for particular beneficial uses, it is safe to say they will have them.

It appears that the use of fuel oil in place of coal cannot be controlled where coal cannot be supplied. In other cases the use of fuel oil as a source of gasoline operates to a considerable extent as an economic corrective. Projects for restriction by law upon the use of oil products for beneficial purposes in order to relieve competition with coal would not seem to be, at least at the present time, within the range of a practical policy.

There is no serious and preventable waste in manufacturing processes.

The average citizen may not always realize that what he pays for gasoline is dependent upon the extent of the supply but he would not fail to understand immediately the effect in an increase of price through an attempt by legislation to curtail production.

The question really is as to the establishment of a policy of delaying production or of retaining petroleum in the ground until it is thought to be needed from an economic standpoint.

It would seem to be clear that such a policy of delaying production or of conserving the oil in the ground would be directly contrary to the existing policy of the Government as that is reflected in the Federal Leasing Act of 1920, and the permits and leases issued thereunder as well as to that indicated in certain forms of oil leases prescribed for use in connection with Indian lands.

The characteristic of the present Federal system seems to be prompt, continuous and competitive drilling.

The early and complete development of an oil property under the Federal Act is implied in the duration of the lease.

It would appear that the idea of unit operation is negatived by the terms of this Act and that competitive development is the foundation of the legislation.

It may be safely taken for granted that, under the powers to regulate commerce, Congress has no constitutional authority to control the mere production of petroleum on lands (other than Indian lands) within the territory of a State. All plans for requiring unit operation or otherwise, which involve the assertion of such an authority on the part of Congress, do not require discussion. They proceed from an utterly erroneous conception of Federal power. It does not further the policy of conservation to take up the public attention with futile proposals which disregard the essential principles of our system of government.

The Government of the United States is one of enumerated powers and is not at liberty to control the internal affairs of the States respectively, such as production within the States, through assertion by Congress of a desire either to provide for the common defense or to promote the general welfare.

The Federal Government has a large public domain. Instead of granting future oil leases it can keep the oil within its property not already disposed of, if it so desired and conserve it for itself.

(Continued on Page 88)

Estimates Supplied by the Committee of Eleven of the American Petroleum Institute

I may, however, refer briefly to the estimates supplied by the Committee of Eleven of the American Petroleum Institute. Whatever differences there may be as to the conclusions to be drawn therefrom, it can hardly be questioned that the **data** submitted to the board by by the Institute were obtained by the careful study of highly qualified men. For the first time, the practical men of the industry, who know it most intimately, whose lives and fortunes are bound up in it, whose investments depend upon the accuracy of their scientific predictions, whose interest supplies a constant caution, have organized a competent survey of all resources which are available for motor fuel and lubricants, and of the economic conditions which are pertinent, in order to set forth the expectations which may reasonably be entertained. The report on supply was prepared by a subcommittee consisting of Wallace E. Pratt, of Houston, G. C. Gester, of San Francisco, E. W. McCrary, of Tulsa, and F. Parker, of Ponca City, from data and conclusions presented by technical subcommittees from each part of the country. In view of the recent letter sent out by the director of the United States Geological Survey, asking comments upon this report, Mr. Pratt, the chairman of the committee, has written to the director as follows:

"The technical supply report which the Committee of Eleven transmitted to your board combines the work of scores of petroleum geologists over a number of weeks. These men were instructed to establish the facts as to supply and recovery of petroleum as fully as possible, and to be conservative in any estimates they found it necessary to make. Since the investigation was made in response to an expressed fear that a national emergency might arise through a shortage of petroleum, all classes of possible petroleum reserves were to be analyzed. I can assure you that these men made a sincere and arduous effort to carry out this instruction to the letter. They had at their disposal the production records of hundreds of companies operating throughout the oil fields of the nation and in every case they had the advantage of intimate and long experience in the territory which they handled. Each unit of our producing area was assigned to a large group of the leading geologists and technologists operating in that area, and the combined opinion of this group of men was accepted with modification for the particular region, and was incorporated in the report. I believe that the results of such an anlysis ought to be more dependable than the opinion of any one expert or group of experts who might testify as to the whole nation."

Report On Supply

This report on supply showed the following:

Producing area in Continental United States excluding Alaska, acres...	2,140,684
Proved undeveloped area, acres	1,103,905
Reserves of producing and proved acres (common methods of flowing and pumping), barrels	5,321,427,000
Estimated amount of oil left in ground under producing and proven areas after flowing and pumping cease, barrels..	26,394,157,000

In answer to the questions as to these estimates Mr. Pratt has informed the

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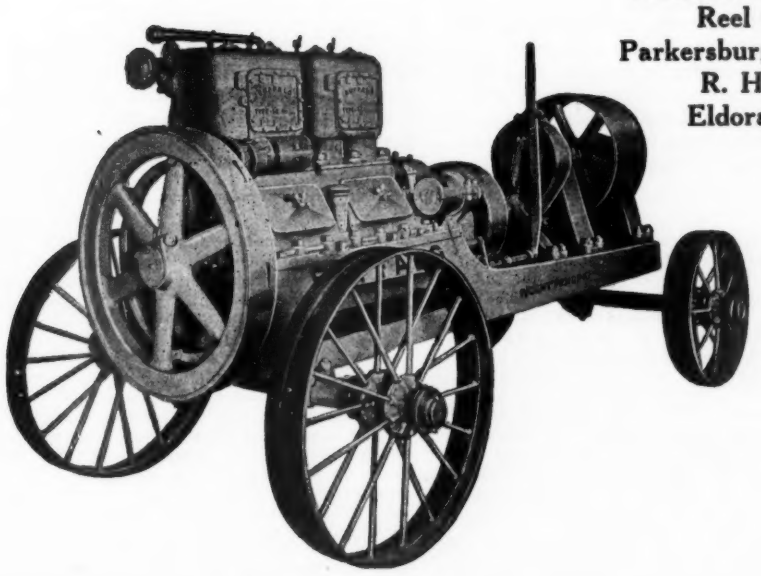

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director of the Geological Survey as follows:

"Question No. 1. Is the estimate of 5,300,000,000 bbls. of oil recoverable by present methods from existing wells and proved acreage a reasonable estimate?

"Answer. Yes, the estimate of 5,300,000,000 bbls. yet to be recovered by ordinary methods is reasonable. It is the summation of the amounts which groups of men intimately acquainted with each of the producing districts in the United States agree will come from their particular district. As to the portion to come from the territory with which I am familiar, Texas, Louisiana, Arkansas and southern Oklahoma, my opinion is that the estimate is too low. If the estimates were to be revised today, a year later, the figures for a number of Texas fields would have to be increased. The men whose opinion was accepted were in several cases so fearful of overestimating that they erred on the other side. I am confident, knowing the men who made the estimates for other parts of the nation, that their estimates like ours are reliable and reasonable.

"It should be noted that the estimate in question includes all oil to come by ordinary methods of production from producing and proven acreage, not from 'existing wells.' We are constantly redrilling our wells in producing territory and could not get the oil except by so doing.

"It should be remembered also that some 670,000,000 bbls. of this oil is not available under existing market conditions, but will only come out if the future prices justify. This is clearly stated in the technical report. In this connection the estimate of 'proven acreage' as given in the report should be mentioned since this estimate also has been widely criticised. Much of the proven acreage, as is stated in the report, is proven only for such small production as to be of no present commercial value. Only higher prices can make it available, but in case of a national emergency it would become a reserve. We are today exploiting only our 'high grade' petroleum 'ore.' The low grade deposits, as in the case of many other minerals must await higher prices. The estimated area of this class of acreage in Texas and adjacent states, I consider conservative and I know the men who made similar estimates for other parts of the country were also conservative in their attitude.

Oil Left in Ground

"Question No. 2. Is the estimate of 26,000,000,000 bbls. remaining in producing and proved acreage a reasonable estimate? Is it significant? That is, is this oil, or an important part of it recoverable by methods and at prices and within a period that justify the United States and its industries in relying upon it as an important factor in maintaining production?

"Answer. Yes, the estmate of 26,000,000,000 bbls. remaining in the ground within the present producing and proven areas after ordinary flowing and pumping cease, is reasonable. At the date of the report on supply the nation had produced about 8,000,000,000 bbls. of oil, and it was estimated that some 5,000,000,000 bbls. were yet to come, making a total of 13,000,000,000 bbls. The estimate in question, then assumes only that 2 bbls. of oil remain in the ground for every barrel produced under present conditions. The most widely quoted figures, several of which the Federal Government itself has issued, are to the effect that from 5 to 8 bbls. remain in the ground for every barrel recovered in ordinary practice.

"The estimate is significant in that there is every reason to believe that a material part of this oil will be recovered as needed by industry. It is already beginning to be recovered under favorable circumstances and this recovery work is expanding rapidly."

Billion Acre Reserve

A good deal of attention has been attracted to what has been called the "billion acre reserve" to which the report on supply refers. It is not necessary to discuss the propriety of this characterization of the criticism it has evoked. The facts stated in the report of the subcommittee on supply were these: The total area of Continental United States, excluding Alaska, was given at 1,936,489,800 acres; the producing area was put at 2,140,684 acres; the proved undeveloped area at 1,103,905 acres; the unfavorable areas were estimated at 827,790,752 acres, leaving the remainder, within which it was said oil fields might be found, amounting to 1,105,454,459 acres. In answering the director's question as to the significance of this estimate, Mr. Pratt has said:

"The area to which you refer as the 'billion acre reserve' includes every acre of land in the nation not already producing or proven, or not so definitely unfavorable as to be impossible for oil production. It includes all of the unproven territory surrounding our present oil fields. Within this area more than 20 new pools have already been discovered since the preparation of the report on supply. So far as Texas and the surrounding territory is concerned, at least two wells now are being drilled in areas excluded from this billion acres, as being practically impossible, on locations selected by the geological departments of major operating companies: Both wells have already shown oil. The location for one of these wells was recommended by the geological department of a company whose president has been most hostile to the Committee of Eleven report. I confidently expect to see this possible area extended in this particular region, so that commercial oil will come from a still wider territory. I believe that the men who selected the areas in which the discovery of new fields is possible in other parts of the country were as well qualified and as conservative as we were for Texas. Therefore, I am inclined to accept their figures as I do ours, with the result that we would have an area of approximately one billion acres in which the discovery of new oil fields is possible.

"The report on supply clearly states that only a very small part of this billion acres can even be expected to produce oil. If only one-half of 1 per cent of it proves productive our producing area will be more than doubled.

"It may be useful to explain that the technical committee on petroleum supply originally set up various classes of unproven acreage including favorable unproved, probable unproven, possible unproven, and impossible unproven, but after much work and argument it became apparent, excluding producing and proven acreage, that agreement could be obtained only as to areas in which the discovery of new oil fields was possible, as contrasted with areas in which new discoveries were practically impossible. As a result, there came into being the class of territory which has been referred to as the 'billion acre reserve.' In this selection of possible acreage we were obliged to lean rather heavily on the opinion of the state geologists of some of the states remote from production. In each area, however, we consulted authorities whose opinion carries weight.

"Six years ago it was my privilege to sit with a committee sponsored by the United States Geological Survey, in another attempt to estimate this nation's petroleum reserves. Since that time I have seen oil production established over thousands of acres of land which that early committee (myself included) viewed with the same attitude that is being manifested in some quarters today toward the billion acres in question.

"The statement that this reserve constitutes our 'major reserve' is a statement of opinion. No one can say definitely that it will produce a single barrel of oil. No one can forecast what this reserve will amount to, but I certainly expect it to yield a great volume of additional oil, basing my opinion of past experience in similar territory.

"I would not say that we have a 'billion acres of land of geological formation favorable to the presence of oil' nor 'in which geology indicates oil is possible.' The technical report on supply does not make either of these statements, although the expression of opinion by the Committee of Eleven inadvertently phrases itself in these words."

Former Official Estimates

In appraising the value of estimates, it is well to note that official estimates in former years have fallen considerably short of actual production. In 1908, David T. Day, chief geologist of the United States Geological Survey, estimated the minimum supply to be 8,014,864,182 bbls. and the maximum, 22,514,864,182 bbls. It has been pointed out that at the end of 1923 the prolific and expanding Mid-Continent Field in the light of Day's minimum figures should have become "exhausted." In the report of the National Conservation Commission in 1909, it is stated:

"The production tables show that in 17 years Pennsylvania and New York have decreased to a third of their greatest output. The decline has become regular, and logically extended, will render the production negligible in 10 years."

The chart accompanying the report shows a production of 9,000,000 bbls. in Pennsylvania and New York in 1909, and indicates a decline by 1921 to approximately 2,600,000 bbls. The actual production of the two States mentioned in 1921 was 8,406,000 bbls., and in 1924 was 8,901,000 bbls. The domestic production of oil in the United States in 1909 was 26 per cent of the production in 1924.

In 1914, Ralph Arnold made a survey of the country's future oil wealth according to which the fields in Kansas, Kentucky, Tennessee, Louisiana and Texas should now be "exhausted."

In 1915, the United States Geological Survey issued a revised estimate to include new fields not provided for in Day's estimate.

In 1918, David White, chief geologist of the United States Geological Survey, published a further revision according to which, at the present rate of production, there would be only a little more than four and one-half years' supply. In February, 1919, Doctor White reviewed the more authoritative estimates in a paper presented at the annual meeting of the Society of Automotive Engineers, in which he said:

"The most significant feature of the prospect, however, is the probability that although an estimated two-thirds of our

HIGH POINTS IN MR. HUGHES' ADDRESS

(Continued from Page 85)

If oil tracts within its domain are not deemed to be sufficient for this purpose, the Government can acquire other tracts. There is no limit to the power of acquisition of oil properties in order to meet the needs of the Army and Navy or to provide for other Government uses except the limit which Congress may put upon the use of public moneys for that purpose and the disposition of the people to pay taxes.

It is idle under the Constitution to attempt to secure by Federal regulation the curtailment of production, or to require unified operations in production by private owners within fields subject to the jurisdiction of the States.

The conservation of oil in the ground within such territory by government control of mere production or the taking of oil out of the ground, is a question for the States, so far as such control may constitutionally be exerted under our form of government.

In regard to voluntary co-operation in curtailing production, owners who are engaged in interstate commerce may well hesitate to enter into combinations which, in restricting production, might be regarded by the courts as also intended to bring about a substantial lessening of competition in interstate trade and an unwarranted restraint upon interstate trade.

If production is curtailed, the price of oil products will most certainly be increased.

It cannot be assumed that a State would have the power to compel an owner to subject his right to drill for oil on his property to the will of the other owners as to whether or not drilling should take place.

The remedies which have been proposed to the board are (1) Scientific and (2) Political.

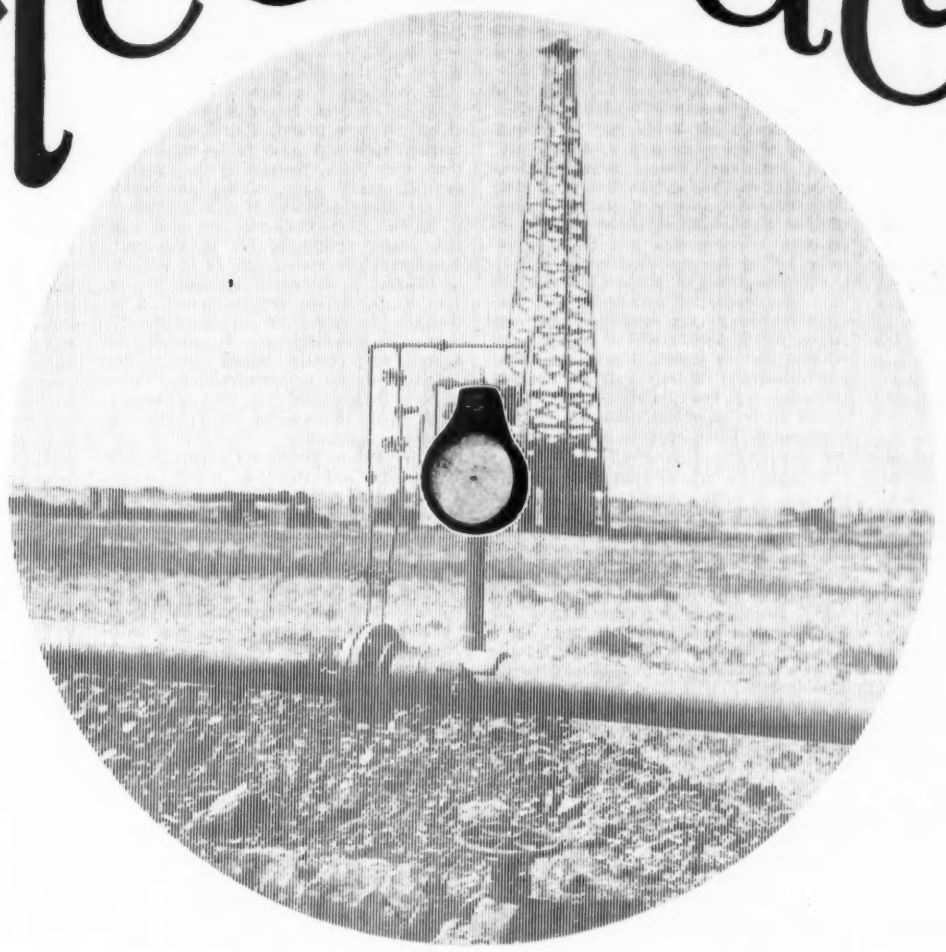
Political action is superficially attractive, but it is beset with difficulties and it is not likely to succeed. Something might be accomplished by the removal of legal obstacles to intelligent co-operation.

Scientific effort holds the promise of the future. Much has already been accomplished. The cracking process has done more for conservation than any legislative scheme which could be put into effect under our constitutional system.

The Government can accomplish much in stimulating and leading research. The oil industry is ready to co-operate in all practicable measures to promote research, to attain and diffuse more exact knowledge, to stimulate invention. Throughout the industry, at this time as never before, the keenest minds are at work studying every process, searching for improvement in every direction. This is, of course, largely due to the demands of competition. It is motivated by intelligent self-interest.

It cannot be doubted, in view of the experimentation that is now going on, that we are on the eve of important improvements in every department of the industry; in methods of production; in the recovery of oil that still lies below the surface within known fields; in the utilization of what is produced; in the promotion of efficiency; in the development of substitutes. The great service that this board can render is to bring about an intelligent conception on the part of the public of the facts relating to the industry, of its problems both economic and legal, and to foster the scientific investigations upon which ultimately the conservation of our vastly important oil resources must depend.

Accuracy



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reserves is still in the ground, with an annual drain of one third of a billion barrels, the peak of production will soon be passed—possibly within three years. The date when the peak will be reached is a matter of individual opinion, in which predictions have wide range. There are many well informed geologists and engineers who believe the peak in the production of natural petroleum in this country will be reached by 1921, and who present impressive evidence that it may come even before 1920."

Production of Crude

The production of crude oil in the United States in 1919 was 378,367,000 bbls.; in 1924, 714,000,000 bbls.

The last and most thorough estimate was made in 1921 by the United States Geological Survey with the co-operation of the American Association of Petroleum Geologists. This estimate gave the entire United States a reserve of 9,150,000,000 bbls.

It will be noted that prior to this estimate of 1921, California had produced 1,427,383,000 bbls., and it was allotted a total future production of 1,850,000,000 bbls. and today the oil to be recovered from present producing wells, and proved areas yet undrilled, in California, is estimated at 2,140,000,000 bbls.

Before this estimate of 1921, Oklahoma had produced 1,159,071,000 bbls. It was allotted 1,340,000,000 bbls. for the future. Since 1921, it has produced 481,395,000 bbls. and the estimate of oil to come from wells now drilled, and from areas proved for production, allowing no production at all for new discoveries, is 1,353,000,000 bbls.

It is not disputed that the estimate of 1921 was a careful, expert estimate, but in a year it appeared to be in important details grossly inaccuraie. In considering estimates, it is natural that attention should be centered upon the figures presented instead of the qualifications with which they have invariably been accompanied. In connection with all the official estimates to which reference has been made, the necessary caution has been given that they were conjectured and the actual results have abundantly justified the warning that they might prove to be wide of the mark.

Substitutes

I shall not dwell upon the prospects of obtaining oil from oil shale in commercial quantities, or upon the possible liquid fuels which may be obtained from coal and lignite. The report on supply, to which I have referred, deals with these matters at considerable length, and it is apparent that there are highly important reserves of this sort which would be available if economic conditions, that is the price, should justify resort to them.

It may also be said that it is the belief of many who have had exceptional opportunities and incentives for careful study of the prospects of the oil industry, that the development and utilization of a substitute motor fuel are "just around the corner."

Foreign Oil

While no one would be disposed to underestimate the importance of the oil reserves within our own territory, the extent to which American capital has been invested in foreign oil fields should not be overlooked in considering our sources of supply. The foreign policy of this Government, which is expressed in the phrase "open door," consistently prosecuted by the Department of State, has made it possible for our American interests abroad to be intelligently fostered and the needs of our people, to no slight extent, to be appropriately safeguarded.

Not a Case of Sudden Emergency

Whatever may be said of estimates, one way or the other, it will probably be agreed that the nation is not faced with the prospect of suddenly finding itself without oil. Deeper drilling, through improved drilling methods which will be perfected, will permit exploration of depths much greater than those now obtainable, and may open new reserves and greatly increase supplies. The considerable reserve from wells and fields already producing, the oil to come from known deeper sands in those fields, together with the oil left in sands which will gradually be available as the price warrants, are reassuring, but they must be supplemented by continuous discoveries in the large areas referred to if we are to continue to obtain our motor fuel and lubricants from petroleum. The key to finding these unknown and necessary reserves of oil in the future, as in the past, must be freely moving prices which, when production is insufficient to meet demand, will furnish an incentive for men and capital to take the large risks incident to an uncertain and hazardous enterprise. Search and more search, drilling and more drilling, continued combing of areas within which oil fields may be found, drilling of many thousands of "wildcat" wells, individual losses, large additions to capital and the application to production and consumption of the best scientific methods, and at times rapidly increasing prices, which will be most unwelcome, are the cost that must be paid, but if paid, there is reason for confidence that the supply of petroleum will continue for many years and that the transitions to substitutes will be gradual and without serious shock. It is evident that any estimate of future supply and demand that did not embrace the price factor would be futile. Price finds the oil and produces it. Price controls and limits its use.

It does not appear that there is any prospect of sudden disaster. Oil fields do not play out in an instant. Such fields have their periods of flush production, followed by many years of gradual decline. There are wells in Pennsylvania which have produced oil for over 50 years. Even Spindletop, the first of the Texas gusher fields and member of a class notoriously short-lived, after a lapse of over 25 years, produces each day its 1,200 bbls. of oil. Indeed, recently, a new sand has been picked up in this old field.

It would seem to be quite clear that a continual and steadily decreasing production and the recurring constant failure of "wildcatting," will indicate the exhaustion of our petroleum products long before it shall become burdensome. There is certainly no reason for being stampeded into hasty and inconsiderate action, and the requirement with respect to this, as to other questions of public importance, is for care, deliberation and sound judgment.

Practical Questions Relating to Conservation

Leaving estimates, we come to the practical questions relating to conservation. These questions pertain to production, manufacture and consumption. It may be helpful in reducing the problem to its final terms to consider these questions in inverse order.

First.—Consumption of Oil Products —Uses

At least, in the popular sense, there cannot be said to be waste in the use of oil products. That is, they are not allowed to run away or to be wasted. They are devoted to beneficial uses. The question would appear to be one of competition, for certain uses, between oil products and other commodities; as, for example, in the case of fuel.

If, however, the question be directly faced of a restriction of a beneficial use of oil products produced and sold in the market, it would seem to be quite clear that any such restriction by governmental action, that is, by law, would be extremely difficult, if not impossible, to impose. Congress could not deal with the matter except so far as interstate commerce was concerned. It is difficult to imagine a successful attempt to prevent by legislation the movement in interstate commerce of oil products for particular beneficial uses. Meanwhile, the States, respectively, would remain the judges—subject to constitutional provisions—of the policy of placing restrictions upon the use of oil products in intrastate commerce.

In **Walls** vs. **Midland Carbon Co.**, 254 U. S. 300, the Supreme Court of the United States sustained a statute of Wyoming which had for its declared purpose the conservation of natural gas and which prohibited the use, sale or other distribution of natural gas for the purpose of manufacturing or producing carbon or other resultant products from the burning or consuming of such gas, without the heat therein being fully and actually utilized for other manufacturing purposes or domestic purposes. The case was held to fall within the principle announced in **Lindsley** vs. **Natural Carbonic Gas Co.**, 220 U. S. 61, which sustained the exertion of the power of the State to prohibit the owner of the surface from pumping on his own land water charged with gas, in order to preserve from depletion the subterranean supply common to him and to other owners. The court held in the **Walls** case that the State power was constitutionally exercised "to prohibit an extravagant or wasteful or disproportionate use of the natural gas of the State." In both cases, it should be noted, the point stressed was that of **waste** in the particular manner of use and not simply of one beneficial use as contrasted with another. The statute was the result of a clear perception of a local exigency.

With the pressure of the desire to develop local production and to promote local prosperity, it would seem to be a vain hope that States would be disposed to impose a restriction upon local use of oil products for beneficial purposes in the absence of a definitely conceived local emergency. If the American people desire oil products which are available in time of peace for particular beneficial uses, it is safe to say that they will have them.

Fuel Oil

The particular question which has given rise to some concern is the use of oil as fuel in place of coal. It is important to note the extent of such use which, from any point of view, could be the subject of prevention or restriction.

In Mr. Teagle's address before this board, he stated that last year there were consumed in and exported from the United States approximately 400,000,000 bbls. of fuel oil. Of these, it is estimated that 39 per cent were applied to uses where fuel oil has a value materially in excess of the price of coal, such as enriching coal gas, naval and military requirements, Diesel motors, bunkers for passenger ships, etc., so that this proportion of total consumption does not come within the category of this discussion. Moreover, of the remaining 61 per cent, only a part comes into competition with coal. The Pacific Coast States, a section where coal is scarce and the price is relatively high, where fuel oil has been the principal source for energy for more than a quarter of a century, and where any curtailment of the production and use of fuel oil would involve important commercial dislocation, if not disaster, consumed 21 per cent of the total. Then, fuel oil from Mexican and other imported crudes represented 15 per cent of the total. Mr. Teagle pointed out that any limitations placed upon the use of imported crudes would simply divert them from the United States to foreign markets. In this way, 75 per cent of the total of fuel oil consumed in and exported from the United States is accounted for, and in 1925, according to the well-considered statement of Mr. Teagle, there remained only a crude equivalent of 100,000,000 bbls. of fuel oil, which could, in any event, have been subject to arbitrary restrictions. This crude equivalent would amount to about 12 per cent of last year's crude supply.

Fuel Oil As a Source of Gasoline

Mr. Teagle has made an important contribution to the discussion in his illuminating address showing that what was formerly a by-product—fuel oil—can now be converted into gasoline. In other words, the effect is the same as though a new raw material had been found from which gasoline could be manufactured. This is due to the application in recent years of the process of cracking to the fuel crudes and those of high sulphur content, such as California crude, Mexican crude and coastal crudes, the production of which in 1922 represented 45.82 per cent of the total supply. Let me repeat and emphasize what Mr. Teagle has said:

"The price differential between gasoline and the fuel oil value of these fuel and high sulphur crudes was the incentive for further development of cracking processes which have been perfected within the past two or three years, and the industry is thus for the first time in a position to produce gasoline from them. Every grade of crude produced is now a potential source of gasoline. * * * In localities and under conditions where gasoline can be obtained from fuel oil at a cost lower than the natural gasoline in the crude additional cracking facilities will be installed, and there will be a reduction in the available quantity of fuel oil and an increase in the available quantity of gasoline. This is a distinct and revolutionary change from the days of a spread of as much as 15 cents per gallon between tank-car markets for gasoline and fuel oil. Gasoline produced from the initial distillation is, therefore, no longer the controlling factor in determining the value of a barrel of crude. The price of the by-product—fuel oil—

USE OF OIL FOR DOMESTIC HEATING FURTHERS CAUSE OF CONSERVATION

By Leod D. Becker*
American Oil Burner Association

In considering the conservation of petroleum, or in attempting to define its "essential uses" we are apt to forget that when everything is said and done about the troublesome and much discussed question of superior uses, its answer is primarily the consumer's problem. No matter what the producers of competing fuels may do, no matter what we may say, under our present economic system, the consumer through price holds in his hands the key to the determination of the economical use of oil, and the economical use of oil is its true conservation.

Over most of the United States soft coal is the cheapest source of heat, and hence most commonly used. Yet consumers by the hundreds of thousands pay two or three times as much, on a B.t.u. basis, for hard coal. Its superiority justifies the higher price. Similarly furnace oil is a superior fuel to anthracite for domestic heating. But furnace oil is also potential gasoline. The extent to which it will, through cracking, supplant coal for domestic heating will be determined by the consumer, through price. And whether furnace oil is to be used for cracking, or for domestic heating will be determined by the consumer through the relative price he is willing to pay for gasoline and for heating oil. Precisely what the ultimate price the consumer will be willing to pay no one can say with assurance, but on the basis of the history of fuel prices in the automobile industry, I believe that the figure will be higher than most of us now anticipate.

It is because of the often demonstrated American willingness to pay for that which is new and more convenient, that the number of installations of domestic oil burners is increasing at an estimated rate of 250 per cent a year.

Industrial Cost Limit

In the vast majority of industrial oil burning plants the cost of operation is of primary importance, and the choice of fuels will be made entirely on the basis of the cheapest source of energy. Where oil burners are used for heating dwellings or commercial buildings of many types, cleanliness, comfort and convenience are of first importance, hence the price the consumer will pay is much more elastic than in industry. If the installation of domestic oil burners in the United States and Canada continues at its present an-

(Continued on Page 160)

*Before Federal Oil Board, Washington.

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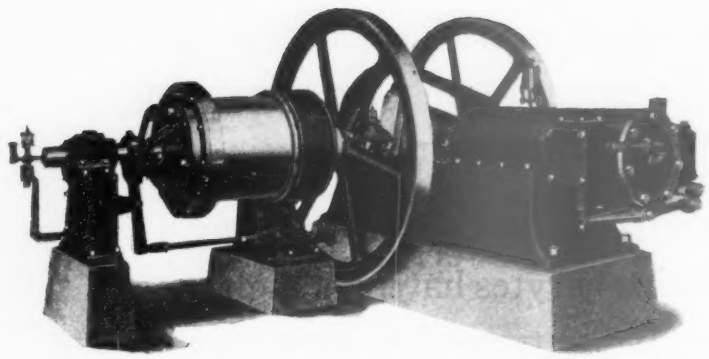

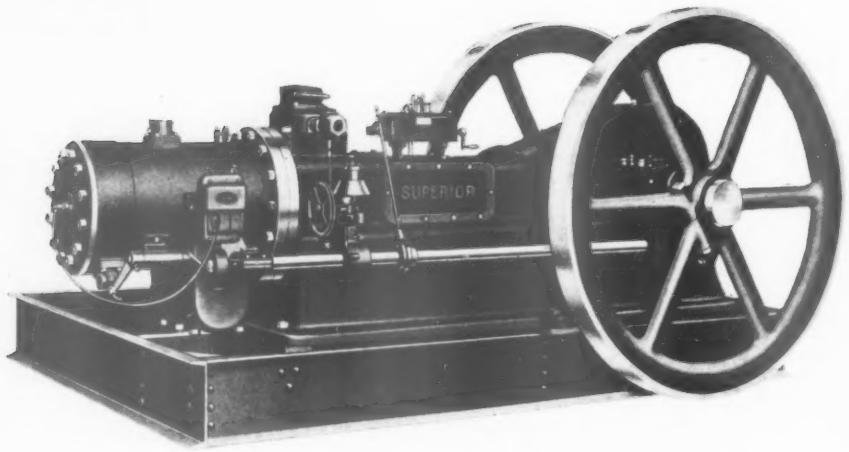

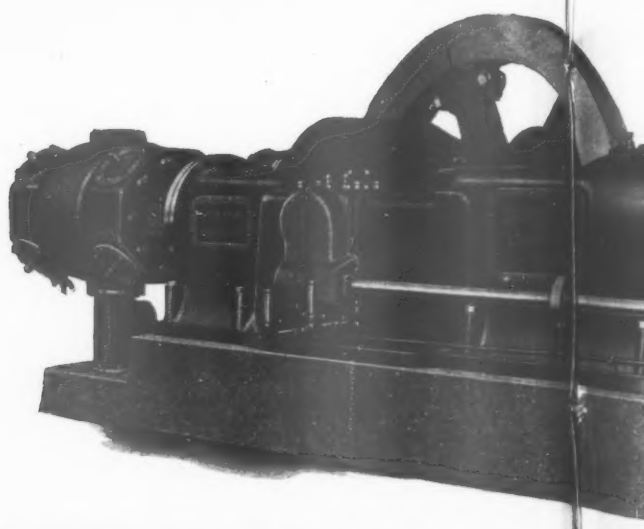

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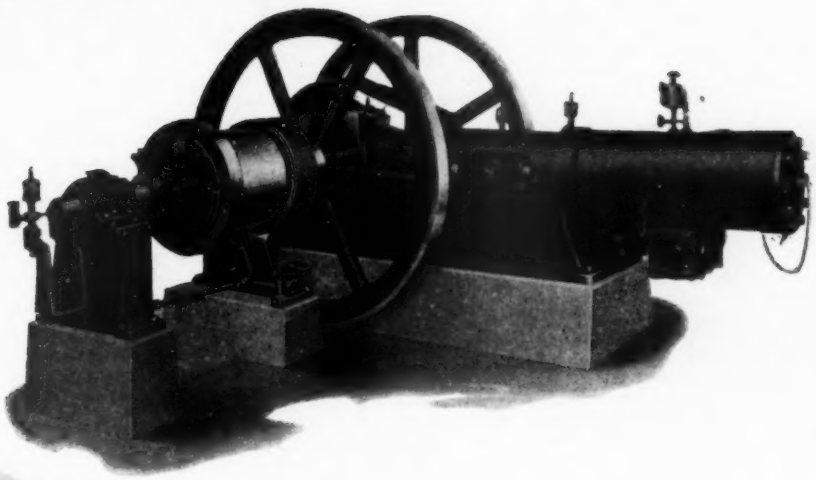

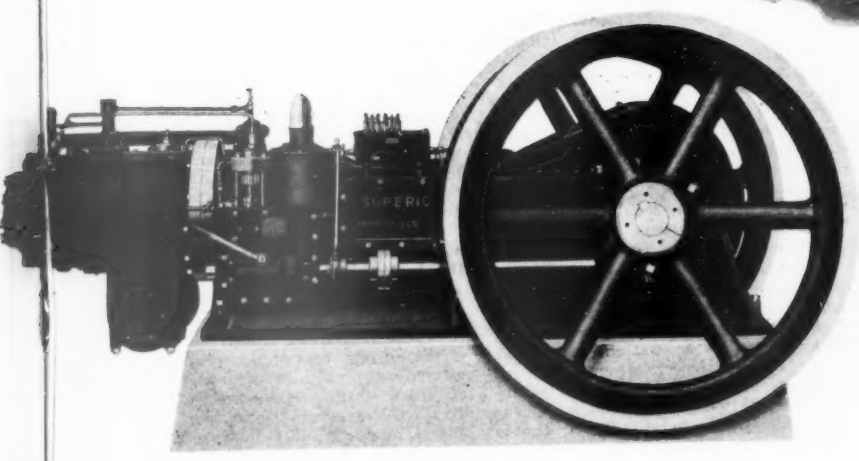

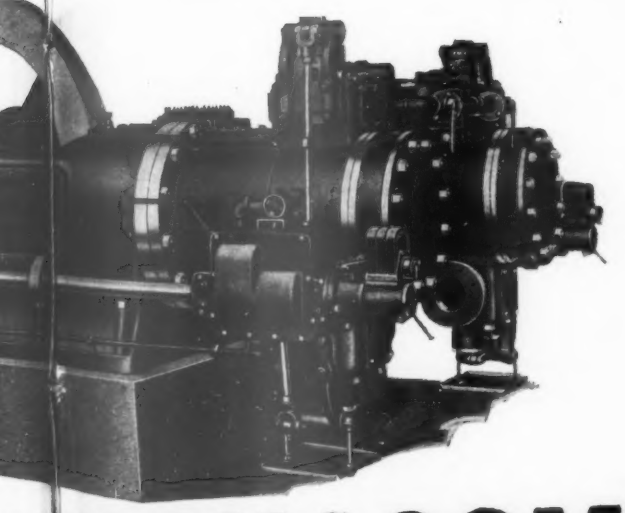

SUPPLY COMPANIES

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has ceased to be incidental and has become a real factor in the determination of this value.

"Although the discovery and development of the cracking principle has not only revolutionized the petroleum situation but has effected a conservation measure of incalculable value, it is doubtful if its significance is as yet fully grasped. Cracking has doubled our potential gasoline resources. Cracking has demonstrated that with price incentive further progress in the conversion of the less valuable products of petroleum into the more valuable is certain of accomplishment.

"Under these conditions it is reasonable to assume that at such time in the future as the production of crude oil declines, or the consumption of finished products increase, to the point of threatening a shortage, prices will advance and consumption will decrease beginning with the use of oil for which a substitute is obtainable at a lower cost. This means, first, curtailment in the use of fuel oil for steam purposes. When the cost to the consumer of petroleum for steam purposes becomes higher than that of coal there will be a conversion from oil to coal, with a corresponding reduction in the consumption of fuel oil which so released will be available for conversion into products of higher value."

Fuel Oil and Coal

In response to what he termed the natural query why this conservation should not be extended to the point at which the production of fuel oil should be so restricted as to eliminate its substitution for coal, Mr. Teagle said that such restriction would ignore the influence that the price of fuel oil is exerting and will continue to exert upon the production of crude, and he added:

"Where gasoline can be produced from fuel oil by cracking, cheaper than gasoline produced from the initial distillation of crude, self-interest will prompt the industry to install cracking equipment rather than run additional quantities of crude. This has been the trend of the industry during the past two years, a trend which will undoubtedly be more marked if in the future the existing differential between the price of fuel oil and crude be maintained or increased."

Mr. Teagle reviewed the refinery operations for the past three years as illustrative of this tendency. It appeared that gasoline was produced more cheaply from cracking than from the initial distillation of the crude, and in this way by utilizing only distillates 144,000,000 bbls. of cracked gasoline were produced. To have produced this amount of cracked gasoline from the initial distillation of crude, on the estimate of the average yield reported by the Bureau of Mines, would have necessitated the running of 585,000,000 bbls. of crude. So that this amount of crude was actually conserved by the cracking process during the past three years. Every barrel of crude is now a potential source of gasoline and in most localities the fuel oil is still the cheapest source. East of the Rockies fuel oil is in direct competition with crude as a source of supply for gasoline. Thus, as long as this price condition continues, Mr. Teagle predicts, increased quantities of gasoline will be made from fuel oil, reducing proportionately the demand for crude and this reduction in the demand will be reflected in the enhancement of the value of the fuel oil content of the crude.

We have here an illustration of the effect of inventive skill in providing an economic conservation of raw material which it would be impossible to secure by law. We may look for similar results, under economic pressure, in promoting higher efficiency in the operation of motor vehicles and in the development of substitute motor fuels.

It may be stated, in summary, that it appears that the use of oil as fuel in the place of coal cannot be controlled where coal cannot be supplied, and that in other cases the use of fuel oil as a source of gasoline operates to a considerable extent as an economic corrective. Projects for restrictions by law upon the use of oil products for beneficial purposes in order to relieve competition with coal would not seem to be, at least at the present time, within the range of a practical policy.

Second. Manufacture

It is believed that it is admitted that in the competitive conditions which characterize the oil industry, and with the extraordinary technical skill that is constantly devoted to its development, there is no serious and preventable waste in manufacturing processes. Undoubtedly, there will continue to be improvements in processes, resulting in further economies, but it cannot be expected that this Board, however competent to deal with general questions, could profitably address itself to questions of this technical character.

Storage

It should also be said that any waste of oil produced and held for the market may be, and should be, prevented by suitable storage facilities. Not only does self-interest furnish a controlling motive here, but there are restrictions imposed by law in a number of States to insure proper methods of storage. Such restrictions, wherever they may be deemed to be necessary, can be provided by the appropriate authority.

Third. Production

We come now to the heart of the questions presented for the consideration of the Board. It is manifest that underlying this inquiry is the thought of overproduction. So far as what are asserted to be the undesirable, that is, the uneconomical uses of oil products are concerned, these uses are traceable to the cheapness of those products as a result of the extensive production.

The most serious complaint is made of waste in production through certain methods employed; through overdrilling; through the inducement of those having properties within a newly discovered oil field to rush at once to the production of all the oil that can be got out, with the consequence, it is strongly urged, of waste in the process of production by the exhaustion of the gas, and of waste through overproduction by the encouragement of uneconomical uses. It has been strongly emphasized that substantial waste occurs when oil pools are excessively drilled. Reference has been made to the cases where the surface has been divided into small plots, often town lots, with a variety and divergence of ownership. It is pointed out that wells are drilled on very small tracts of land, near their boundary lines, and that this in turn necessitates offset drilling by adjoining landowners to protect themselves against damage, which applies to each successive ownership in turn throughout the area. It is said that frequently 10 or more wells are drilled within a space where good practice would warrant but one. It is emphasized that such drilling results in very rapid development, meaning at times sudden large production, a flooding of the market, so that in addition to the drilling there are other losses. Again, by the ordinary methods of flowing and pumping a large proportion of petroleum is left in the ground. The amount is variously estimated; some maintain that four or five barrels of oil are left in the ground for every barrel recovered by flowing and pumping, and others insist that what is left in the ground constitutes a still larger proportion. It is also urged that to a great extent the natural gas has been wasted through present methods of production.

Price and Supply

The picture of haste in production, of the excited rush of owners in new fields to get the oil which may underlie the surface of their properties before it may be taken by owners of contiguous tracts; the irresistible incentives moving speculative prospectors; the lure of the vision of quick returns and sudden wealth obtainable by immediate developments; is one which cannot fail to impress the imagination and to give rise to anxiety as one observes the depletion of resources, which, once used, can never be replaced.

There is another picture which also fascinates the imagination, and that is of millions of motor vehicles crowding all the highways of the United States, which our people, almost without exception, regard as essential to their varied activities, their convenience and their comfort. Without the incentives making their appeal to speculators, undoubtedly production would be decreased, and, without the present scale of production, the price of oil products would rise. The average citizen looking at the fluctuations in the price of gasoline, and not understanding the economic cause, is sometimes disposed to think that representatives of selfish stockholders are seeking an enhanced profit at his expense. While he may not always realize that what he pays for gasoline is dependent upon the extent of the supply, he would not fail to understand immediately the effect in an increase of price through an attempt, by legislation, to curtail production. The increase of price which results naturally from any decrease in supply would undoubtedly furnish a basis for the use of substitutes. But along with the problem of what is called overproduction, not in the sense of the production of oil not used, but in the sense of the production of oil not economically used because it is cheap, is the inescapable problem of the public reaction to artificial restrictions involving an increase in price.

Production and Use

As already pointed out, a distinction should be observed with respect to any unnecessary waste in the mere processes of production, and the uneconomic use of what is produced. As to the mere process of production, we are confronted with scientific problems, for the solution of which is every possible inducement to those engaged in the industry to make improvements and to secure larger returns. The process of getting the oil out of the land has back of it the obvious motive to get all the oil that can be got out and to sell it,—not waste it. I think it will be agreed that so far as the mere process of extracting the oil is concerned, the question is one of invention and skill. In addition, the States have regulations as to methods which must be observed.

There is also the question of co-operation among owners in order to facilitate economical production through which indeed, it is said, there could be increased production to the general advantage. The point in this respect is either of co-operation enforced by law, or of voluntary co-operation with the enhancement of opportunity by qualifying or removing existing restrictions.

The further point is made, however, that under present methods, with the haste and individual initiative that characterize the exploitation of new fields especially where they are held by a number of owners, **too much oil is taken out**, or the oil is taken out **too rapidly**, and not enough is conserved in the ground. When I say that the point raised is in substance that not enough oil is left in the ground, I refer to the obvious fact that if it is taken out, and there is a market for it for beneficial uses, it will be sold. The retaining of the oil after it is removed from the ground will be determined by market conditions.

The question then, of control of production, comes to this. **Is the oil to be conserved in the ground? And, if so, by what means?** Further,—**Is co-operation among owners in the operation of pools to be enforced? Is voluntary co-operation to be facilitated?**

This makes it necessary to consider certain legal questions. It would be quite impossible, within the limits which are appropriate for the present statement, to present a brief on the law or to attempt an exhaustive examination of principles and decisions. This, however, I believe to be unnecessary, as I think that the controlling points admit of a succinct statement and do not require great elaboration.

Federal Control of Production of Oil

There are distinct questions as to the control by the Federal Government of the production of oil with respect (a) to the lands of the United States and Indian lands and (b) to the lands (other than Indian lands) which are a part of the territory of the States, respectively.

(1) The public domain of the United States and Indian lands. Within this description there are three classes of lands (a) where the United States holds the fee title, and where the United States as the original proprietor has conveyed the surface to individuals (homesteaders and entrymen) specifically reserving the oil and gas deposits; which together, for the present purpose, may be called the public lands of the United States; and (b) lands, or oil and gas deposits, owned by an Indian tribe in common, where oil and gas leases may be made by the tribal authorities with the approval of the Secretary of the Interior, and not otherwise; and (c) lands allotted to the individual members of the various Indian tribes, in those cases where provision has been made for leases of the allotments for oil purposes with the approval of the Secretary of the Interior, and not otherwise.

At the beginning of these public hearings, the Secretary of the Interior, as Chairman of this Board, referred to the Federal Government in its capacity as the largest landowner. He said that "The amount of petroleum now being taken from the public and Indian lands represents one-tenth of this country's annual petroleum recapture," a fact which he appropriately remarked "suggests that the Government itself is no negligible factor in the current production of petroleum." The Secretary stated at the present time there are outstanding 457 leases on Government oil and gas lands. These leases were made obligatory by the enactment five years ago by Congress of the General Leasing Law, and its administration was reposed in the Secretary of the Interior. Secretary Work also pointed out that on March 3, 1921, there were approximately 1,000,000 acres of land in the Osage Reservation alone, unleased for oil, and that to comply with the applicable law, approximately 100,000 acres must be offered for lease annually, "irrespective of the economic conditions of the oil industry or the necessities of the Indians." He added:

Unwise to Attempt Force

"It is unwise to attempt measures for the conservation and orderly development of the oil resources of this country, with mandatory provisions of law forcing a disregard of the best interests of the Indians, the general public, the oil producers, and the oil industry. We have twice asked Congress to repeal or modify this statute and to vest discretion and authority in the Department of the Interior.

"The most productive areas of these Government oil and gas lands have passed, through the process of governmental lease, to the control of industrial leaders who have exploited and developed them with amazing thoroughness and speed, at a time, too, when petroleum production in this country was at a peak. The Government itself is not without blame in this exploitation.

"The result is that in 1921, a trifle more than 2,000,000 bbls. of petroleum were produced from our naval reserves. Production from this same source increased steadily until 1924, when the peak of production was reached—13,000,000 bbls. for the year. Then, in 1925, a decline set in—a decline which registered a 1,000,000-bbl. decrease for the year.

"The same condition characterized the productivity of the Indian oil lands. In 1921, 30,000,000 bbls. were produced, and in 1923 came the peak, with 54,000,000 bbls., which declined to 48,000,000 bbls. in 1925.

"On the public domain production figures tell the same story. In 1921, nearly 10,000,000 bbls. of petroleum were produced. The peak came in 1923, with a 36,500,000-bbl. recovery. Again the decline, first in 1924, with a full 1,000,000-bbl. decrease, then, in 1925, with a 7,000,000-bbl. decrease, as compared with the 1923 production."

Reference may also be made to the description of the situation leading to the establishment of this Board, which is

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given by the Secretary of the Interior in his Report for 1925. The Secretary said:

"Conservation of the oil resources of the United States has become a subject of national importance. Under the present leasing and royalty practices it is impossible to conserve oil under the ground if a neighboring owner desires to gain possession of the deposits. He simply drills several wells and drains the oil from the property contiguous to his own.

"Although at the present time there is said to be an overproduction of petroleum, the supply is maintained only by the drilling of many thousand new wells every year. Failure to bring in new producing wells for a 2-year period would, in the opinion of Government scientists, so reduce the supply as to slow down industry and bring about a serious situation. With the development of aircraft and its dependency on petroleum products, the national defense is involved, as the supremacy of nations in the future may be determined by the possession of available oil supplies. The Government itself is also directly interested through its control over the public domain, including Indian lands, which still contain large undeveloped reserves of oil. In compliance with the general leasing law, large areas of public lands have already been leased, the Government receiving royalties on all oil produced. Oil from public and Indian lands represent approximately one-tenth of the nation's entire petroleum production."

It is plain that any legislation of Congress in relation to lands which may be regarded as lying within the public domain, as above described, must appropriately take account of all vested oil and gas rights in existence. It should also be observed that there appears to be no need of legislation by Congress to enforce conservation in the sense of preventing the actual physical waste of oil and gas during the development and operation of particular properties and to protect the producing formations from water intrusion or other injury. It is understood that, in relation to the classes of lands above mentioned, this sort of conservation is enforced (a) by the statutory law of the State where the lands are situated, and (b) by the terms of the oil leases themselves. With respect to what are strictly the public lands of the United States, it is understood that the Bureau of Mines enforces this kind of conservation. And in relation to Indian lands, it is understood that this function is exercised by inspectors appointed by the Indian Office. It is believed that nowhere in the oil fields of the country is there more thoroughgoing supervision in order to prevent the physical waste of oil and gas, and the protection of the producing sands during the development and operation of the property, than in respect to the classes of lands now under consideration.

Delaying Production

The question then really is, as already indicated, as to the establishment of a policy of **delaying production** or of **retaining petroleum in the ground** until it is thought to be needed from an economic standpoint.

It would seem to be clear that such a policy of delaying production or of conserving the oil in the ground until, in the opinion of the authorities, it was needed by the consuming public, would be directly contrary to the existing policy of the Government as that is reflected in the Federal Leasing Act of 1920, and the permits and leases issued thereunder, as well as to that indicated in certain forms of oil leases prescribed for use in connection with Indian lands. The characteristic of the present Federal system appears to be **prompt, continuous** and **competitive drilling,** as distinguished from the unified development and operation of an oil pool having as its underlying object the retaining of the oil in the ground until it is needed.

The operator does not gain an oil lease in the first instance; he obtains a license to prospect, limited to a term of two years, with the right in the Secretary of the Interior to extend the license for the additional term of three years. But under the regulations extensions do not appear to be favored. The policy necessitates prompt drilling operations; otherwise the right expires. Furthermore, the permit necessitates unusual diligence in the drilling of wells. The first well must be started within six months from the date of the permit; drilling must proceed to an aggregate depth of 500 feet within the first year of the grant and to a depth of 2,000 feet within the second year (unless valuable deposits of oil or gas are sooner discovered) whereupon the permit lapses unless production has been found or extension granted. Here again we find the idea of prompt development. If the operator finds production under his permit he is entitled to a lease covering one-fourth of the land embraced within it, but even under the lease he must commence actual drilling operations within three months and thereafter must continue drilling with reasonable diligence until he shall have drilled wells equal in number to the number of 40-acre tracts embraced in the leased premises. The Secretary of the Interior has the power to relieve the lessee of the obligation to drill successive wells, but it is understood that this indulgence is granted only where the undrilled portion of lease has been condemned by operations previously conducted. The requirements necessitates the continuous drilling of the property until it is completely developed. Again, the lease by express terms binds the lessee to drill all necessary wells, fairly to offset wells of others on adjoining lands or deposits in the property of the United States.

Early Development Implied

The early and complete development of an oil property under the Federal Act is implied in the duration of the lease. Instead of being for a definite term of years and so long thereafter as oil shall be found in paying quantities, which is, in substance, a perpetual lease, the Act provides for a fixed term of 20 years. Successive extensions of 10 years may be granted but the right of renewal is conditioned in that the Secretary of the Interior may revise the royalty and Congress may strike down the right completely. Hence, an operator developing a property under this Act must do so on the theory that he has a 20-year lease only.

It would appear that the idea of unit operation is negatived by the terms of this Act and that competitive development is the foundation of the legislation. It is provided that no lessee may hold more than one lease on the same producing structure. This means that there shall be as many operators in the field as there are leases. Again, no operator may hold more than three leases in a single State.

With respect to Indian tribal lands, of which the Osage Reservation is the outstanding example, I understand that the duration clause of the lease now corresponds with the ordinary commercial lease, that is, it provides for a term of five years from approval by the Secretary of the Interior and so long as oil or gas shall be found in paying quantities. The operator must drill within one year from the approval of the lease, unless he is unable to obtain casing and other necessary equipment,—a war-time qualification, of no special importance now. Here again the purpose of prompt development is evident.

In the cases of leases made by members of Indian tribes who hold allotments in severalty and who may execute oil leases with the approval of the Secretary of the Interior, leases were formerly for a fixed term of 15 years and many of them contained positive drilling obligations. Within the last year, I understand, the Department of the Interior has promulgated a new form of lease which coincides with the ordinary commercial lease both with respect to its duration and its drilling obligations.

No Change in Policy

The Federal Oil Conservation Board is in a position to judge, as well as anyone, what prospect there is of a radical departure from the policy reflected in the Federal Leasing Act of 1920, and whether, with respect to the granting of future interests in the public lands within the control of the United States which there would be adequate public support for the retention of oil in the ground, until the Federal authorities thought production advisable from an economic standpoint, or for the unit operation of oil properties in order to curtail production.

There would seem to be no indication of such a change in policy in the recent proposal by bill H. R. 9133, by which I understand, it is proposed to open Executive Order Indian Reservations to oil leasing. In May, 1924, the attorney general rendered an opinion that the Leasing Act of 1920 did not apply to Executive Order Indian Reservations. It would seem, therefore, that it happens that there are considerable tracts of land within the public domain which are at present not open under the law to oil leases. But this has been regarded as retarding development in the part of the country affected, and consequently it has been proposed to legalize the development by oil leases to be granted in substantially the same manner as in so-called treaty reservations. I do not profess to speak in relation to the merits of this particular measure, which, as I understand its passage was recommended by the Secretary of the Interior, must be deemed to be a meritorius measure considered from the standpoint of the Government, the Indians and all other persons concerned, but I merely point out that the extension of provision for oil leases on the public domain appears to be a continuance of the policy for the development of production rather than for the curtailment of production.

It is clear, however, that it would be idle to suggest an attempted regulation of production elsewhere, especially in view of the lack of constitutional authority on the part of the Federal Government to control production in the States, if the Federal Government was not in a position to enforce the curtailment of production, or some particular system of operation to facilitate the curtailment of production, within the public domain of the United States.

If, however, the Federal Government, short of radically departing from its present policy as to the public domain, desires to remove artificial conditions which encourage, if indeed they do not absolutely require overproduction, it is in the power of Congress to do so by appropriate changes in its leases so as to give an opportunity to its lessees to have a broader range of discretion and to permit them to determine their developments in the light of economic exigencies.

(2) The question of Federal control of oil production in lands (other than Indian lands) which form a part of the territory of the respective States. Petroleum lies beneath the surface of the earth. The territory now under consideration is a part of the domain of the State over which the State has sovereign jurisdiction and control except as the State power is limited by the Federal Constitution. Production is not commerce and the production of petroleum within a State is not interstate commerce. The case of petroleum, in this respect, appears to be the same as that of coal. As to coal, the Supreme Court of the United States, by Mr. Chief Justice Taft, said upon this point in **United Mines Workers of America** vs. **Coronado Coal Co.,** 259 U. S. 407, 408:

"Coal mining is not interstate commerce, and the power of Congress does not extend to its regulation as such. In **Hammer** vs. **Dagenhart,** 247 U. S. 251, 272, we said: 'The making of goods and the mining of coal are not commerce, nor does the fact that these things are to be afterwards shipped or used in interstate commerce make their production a part thereof. **Delaware, L. & W. R. Co.** vs. **Yurkonis,** 238 U. S. 439.' Obstruction to coal mining is not a direct obstruction to interstate commerce in coal, although it, of course, may affect it by reducing the amount of coal to be carried in that commerce."

Again, it was said by the Supreme Court of the United States in **Oliver Iron Co.** vs. **Lord,** 262, U. S. 171, 178:

"Mining is not interstate commerce, but, like manufacturing is a local business, subject to local regulations and taxation. **Kidd** vs. **Pearson,** 128 U. S. 1, 20; **Capitol City Dairy Co.** vs. **Ohio,** 183 U. S. 238, 245; **Delaware, L. & W. R. Co.** vs. **Yurkonis,** 238 U. S. 439, 444; **Hammer** vs. **Dagenhart,** 247 U. S. 251, 272; **United Mine Workers** vs. **Coronado Coal Co.,** 259 U. S. 344, 410. Its character in this regard is intrinsic, is not affected by the intended use or disposal of the product, is not controlled by contractual engagements, and persists even though the business be conducted in close connection with interstate commerce. **Cornell** vs. **Coyne,** 192 U. S. 418; **Browning** vs. **Waycross,** 233 U. S. 16, 22; **Delaware, L. & W. R. Co.** vs. **Yurkonis,** 238 U. S. 439, 444; **General R. Signal Co.** vs. **Virginia,** 246 U. S. 500; **Hammer** vs. **Dagenhart,** 247 U. S. 251, 272; **Arkadelphia Mill Co.** vs. **St. Louis Southwestern R. Co.,** 249 U. S. 134, 151; **Crescent Cotton Oil Co.** vs. **Mississippi,** 257 U. S. 129, 136; **Heisler** vs. **Thomas Colliery Co.,** 260 U. S. 245.

"The ore does not enter interstate commerce until after the mining is done * * *."

See also, **United Leather Workers International Union** vs. **Herkert & Meisel Trunk Co.,** 265 U. S. 457, 464, 465.

Again, in **Ohio Oil Co.** vs. **Indiana,** 177 U. S. 190, 211, 212, it is said:

"In view of the fact that regulations of natural deposits of oil and gas and the right of the owner to take them as an incident of title in fee to the surface of the earth, as said by the Supreme Court of Indiana, is ultimately but a regulation of real property, and they must hence be treated as relating to the preservation and protection of rights of an essentially local character."

Cannot Control Production

It may, therefore be safely taken for granted that, under the power to regulate commerce, Congress has no constitutional authority to control the mere production of petroleum on lands (other than Indian lands) within the territory of a State. All plans for requiring unit operation or otherwise, which involve the assertion of such an authority on the part of Congress, do not require discussion. They proceed from an utterly erroneous conception of Federal power. It does not further the policy of conservation to take up the public attention with futile proposals which disregard the essential principles of our system of government.

I am aware that it has been suggested that such Federal power to control production within the States might be asserted by Congress because it could be deemed to relate to the provision for the common defense and the promotion of the general welfare.

Reference is sometimes made, in support of this view, to the words of the preamble of the Federal Constitution. But, as Story says:

"The preamble never can be resorted to to enlarge the powers confided to the general government or any of its departments. It cannot confer any power **per se;** it can never amount, by implication, to an enlargement of any power expressly given." **1 Story on the Constitution, Sec. 462.**

And this statement was approved by the Supreme Court of the United States in **Jacobson** vs. **Massachusetts,** 197 U. S. 11, 22, where it was said:

"Although that preamble indicates the general purposes for which the people ordained and established the Constitution, it has never been regarded as the source of any substantive power conferred on the Government of the United States, or any of its departments. Such powers embrace only those expressly granted in the body of the Constitution, and such as may be implied from those so granted. Although, therefore, one of the declared objects of the Constitution was to secure the blessings of liberty to all under the soverign jurisdiction and authority of the United States, no power can be exerted to that end by the United States, unless, apart from the preamble, it be found in some express delegation of power, or in some power to be properly im-

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plied therefrom." **1 Story, Const., Sec. 462.**

Powers of Congress

The suggestion. to which I have referred is an echo of an attempt to construe Article I, Section 8, Subdivision 1 of the Constitution of the United States, not as a power "to lay and collect taxes, duties, imposts and excises, to pay the debts and provide for the common defense and general welfare of the United States," but as conferring upon Congress two distinct powers, to wit (1) the power of taxation and (2) the power to provide for the common defense and the general welfare. In this view, it has been urged that Congress has the authority to exercise any power that it might think necessary or expedient for the common defense or the general welfare of the United States. Of course, under such a construction, the Government of the United States would at once cease to be one of enumerated powers and the powers of the States would be wholly illusory and would be at any time subject to be controlled in any matter by the dominant Federal will exercised by Congress on the ground that the general welfare might thereby be advanced. That, however, is not the accepted view of the Constitution (1 Story on the Constitution, Secs. 907-908; 1 Willoughby on the Constitution, Sec. 22). The Government of the United States is one of enumerated powers and is not at liberty to control the internal affairs of the States respectively, such as production within the States, through assertion by Congress of a desire either to provide for the common defense or to promote the general welfare.

This is too elementary to require discussion and it is impossible to believe that the legal advisers of the Board will suggest that it proceed on any different view.

Government's Requirements of Oil; Including Oil for the Navy, Etc.

Of course, the Government is entitled to provide for the common defense, and to secure suitable provision of oil for all its proprietary uses and for its naval and military service. It does not appear that the making of such provision requires, or involves, the exercise of any authority to control production within the States and thus take over the internal concerns of the States.

The Federal Government has a large public domain. Instead of granting future oil leases it can keep the oil within its property not already disposed of, if it so desires, and conserve it for itself. If the oil tracts within its domain are not deemed to be sufficient for this purpose, the Government can acquire other tracts. There is no limit to the power of acquisition of oil properties in order to meet the needs of the Army and Navy, or to provide for other governmental uses, except the limit which Congress may put upon the use of public moneys for that purpose and the disposition of the people to pay taxes. So far as power is concerned, the Government can acquire for its uses all the oil lands that it needs, if it is willing to pay for them; and, as has been indicated, if the Government desires to conserve the oil in the ground, it can do so on its own properties within the public domain, and if this oil supply is threatened by contiguous properties, Congress may direct the acquisition of such properties, upon proper compensation to the owners, to the extent deemed necessary.

It is also possible for Congress to purchase whatever oil or oil products, so far as it may deem it to be desirable to do so, in order to provide for the future, and store them in appropriate receptacles which will hold it without waste.

The acquisition of oil properties or of oil and oil products, inorder to meet the needs of the United States as a proprietor, is a mere question of an estimate of needs and of financial policy.

Provision for governmental uses, to meet the needs of the United States as a proprietor, is quite distinct from an attempted regulation or curtailment of production within the States in a general public interest, for the purpose of carrying out a policy of conserving oil in the ground so that it may await the economic needs of the country at large in the future. The latter would be the exercise not of the power to tax and to purchase for governmental uses, but of a power to control production upon private property within the States and subject to the sovereignty of the States, respectively. It is not conceivable that any theory will be advanced by the legal advisers of the Government to support such a course of action, however desirable a policy of conservation it may be deemed to be. It is idle under the Constitution to attempt to secure by Federal regulation the curtailment of production, or to require unified operations in production, by private owners within fields subject to the jurisdiction of the States.

The conservation of oil in the ground within such territory by governmental control of mere production, or the taking of oil out of the ground, is a question for the States, so far as such control may constitutionally be exerted under our form of Government.

Federal Extension of Opportunities for Co-Operation

While the Federal Government is not in a position to control the mere operations of production within the States, it is within its power, if it deemed it advisable, to lessen the restrictions upon combinations in the conduct of interstate commerce and thus indirectly, and perhaps measurably, to affect production and to aid a policy of conservation with respect to oil. It has been impressed, I believe, upon this Board that those who propose the plans for unified operation of oil fields do not favor governmental control, but rather plans of operation which will enforce unified operation through the control by the owners of tracts covering a given oil producing structure. In other words, the plan proposed is one of enforcing unification through control by a majority of individual proprietors. Without attempting to deal with the legal objections which stand in the way of putting such a plan into effect, it is apparent that the end sought is co-operation. And if enforced co-operation were found to be impossible of attainment, there would still remain the possibility of a voluntary co-operation. To this voluntary co-operation, however, the act of Congress against combinations in restraint of trade points its warning not only of illegality, but of criminal prosecution and punishment. While production in itself is not commerce, owners who are engaged in interstate commerce may well hesitate to enter into combinations which, in restricting production, might be regarded by the courts as also intended to bring about a substantial lessening of competition in interstate trade and an unwarranted restraint upon interstate trade. The Supreme Court, in holding that production was not commerce added:

"When the intent of those unlawfully preventing the manufacture or production is shown to be to restrain or control the supply entering and moving in interstate commerce, or the price of it in interstate markets, their action is a direct violation of the Anti-Trust Act." **(Coronado Coal Co. vs. United Mine Workers of America, 268 U. S. 295, 310.)**

If Congress were seriously to enter upon a policy of conservation, with the intention of preventing overproduction while still observing the constitutional limits of its authority, it might find it advisable to consider, as a part of such a policy, the advisability of permitting co-operation among the owners of oil fields, but always under appropriate and adequate governmental scrutiny, to the end that these owners might not be stimulated to undue haste and a wasteful competition in the development of their properties and trade, but might have a greater liberty to consult the economic conditions of the industry from time to time.

Such a suggestion as this would probably at once encounter the opposition which threatens any policy of the curtailment of production having for its object the conserving of oil in the ground.

(Continued on Page 100)

Natural Gasoline Production Grows

Total Capacity of All Plants in United States Now Exceeds Five Million Gallons Daily

By Neil Williams

More than 5,000,000 gallons of natural gasoline is being, or can be, manufactured daily in the United States, according to the annual survey just completed by The Oil and Gas Journal. This survey shows that the 1,056 plants in the country have a total capacity of 5,024,090 gallons daily.

While this survey was intended to indicate the potential capacity of natural gasoline plants, these figures more fairly represent the actual daily production. The factors entering into the gallonge capacity necessarily make it difficult to determine what a plant can turn out and in the majority of cases the manufacturers themselves do not know what the limit of their plants is.

Gasoline capacities of plants are extremely variable and undeterminable, depending entirely on the richness of the gas. Plants ordinarily are designed to handle certain quantities of gas so the gallonage capacity would be limited only by the gasoline content of the gas.

Considering these circumstances, the capacities of the individual plants are based more or less on the actual daily production taking into consideration the amount and richness of the gas available. And, as the bulk of these plants are using all the gas available and extracting all the gasoline possible from the gas, these figures, as mentioned, are a good criterion of the actual daily output.

> In this issue The Oil and Gas Journal completes its annual survey of the natural gasoline industry, giving the companies owning plants, the location of the plants, the capacity, type and status, whether operating, shut down or building.
>
> The plants listed as shut down are those which might be operated again, as plants which are being dismantled, or in all probability will be soon, have been dropped.
>
> The plant locations refer to the nearest town and not necessarily the nearest postoffice. Some of the towns are inland or not listed ordinarily in directories.

The 5,024,090 gallons daily capacity is representative of the rapid expansion of the natural gasoline industry. Based on figures in previous surveys made by The Oil and Gas Journal, the daily natural gasoline capacity, or output, now is 371,529 gallons greater than it was at this time last year and 1,627,129 gallons greater than two years ago.

The increase in capacity this year over last was made in face of a decline in the total number of plants from 1,143 to 1,056. This gain is explainable in the fact that although a large number of small plants were dismantled, the new plants installed, while not offsetting in number those dismantled, were considerably larger in total capacity.

Another reason for the increase in capacity was the enlarging of many old plants and the development of more and more efficient equipment which gradually replaced old methods of gasoline extraction. A large number of plants during the year replaced compression equipment with absorption processes or else installed absorbers to operate in conjunction with the compressors.

In this connection, the survey shows that of the 1,056 plants in the country, 547 have absorption processes while only 509 are exclusively compression plants. Last year these figures were reversed when there were more compression than absorption plants.

This is only another indication of the gradual expansion and development of the natural gasoline industry, as with the increase in the proportion of absorption plants comes greater capacities and productions. The bulk of exclusive compression plants are small with just a few hundred gallons daily output while absorption plants ordinarily are much larger. Practically all new plants are of the latter type.

The importance of the trend from compression to absorption and more modern types of gasoline plants is shown clearly in the total capacities of the respective types. Although there are only 38 fewer compression plants the absorption plants have a capacity of 4,054,435 gallons daily while the compression plants produce only 969,555 gallons.

Part of the decrease in the number of plants during the year is traceable to the gradual concentration of the natural gasoline industry as in other phases of the oil business. Many deals were consummated during the year by which a few of the larger gasoline manufacturers purchased or acquired control of smaller companies and their plants and properties.

In taking over these smaller companies, the larger interests instead of operating the newly acquired plants dismantled them and turned the gas into their old plants. By this the number of plants was reduced and at the same time the natural gasoline production maintained or increased.

The diminishing gas supply and the scramble of companies to obtain adequate connection to insure the profitable operation of their plants has been back of some of the company mergers and purchases. It is explained that in some fields there no longer is sufficient gas for all the plants and as a result the supply must be consolidated into nearby plants of companies which can handle more gas easily.

In the Mid-Continent area, representing 5 of the 13 states having plants, is centered the bulk of the country's gasoline capacity. This area is producing 3,266,140 gallons daily which is approximately 65 per cent of the total output of the country. Oklahoma alone of the Mid-Continent has a greater capacity than that of all the eight states not in this district.

It also was in the Mid-Continent that the natural gasoline industry felt its biggest expansion as there the output was increased 326,190 gallons daily during the year as against 45,339 gallons daily in other states. This also is indicated by the new plants as 31 of the 33 plants under construction are in the Mid-Continent.

California stands out as the most important summated gasoline state out of the Mid-Continent as that state ranks second to Oklahoma in capacity of its plants. The noticeable thing about California is the size of its plants, the average capacity in that state being approximately 7,825 gallons daily, while in Oklahoma it is only 5,715 gallons.

Only in Wyoming, is the average capacity of California's plants exceeded, and there the average output is 12,166 gallons daily. The average for the entire country is only 4,757 gallons daily. Oklahoma has many large plants, in fact the largest single plant in the country is in the Covington, or Garber, Field, but the multitude of small compression plants holds the average daily output below that of California.

The larger capacities of the Mid-Continent and western states is in contrast to those of eastern states where the plants are practically all small. This condition is explainable in the fact that the eastern gas fields are all old, and with the gas supply rapidly dwindling, the old small compression plants originally built are not being replaced or augmented by the larger and more modern absorption processes.

Portable Plants

In the newer fields of the Mid-Continent and western states the gasoline manufacturers are able to put into practice developments in gasoline manufacture which have resulted from years of experience in eastern fields and they also have the advantage of newer and greater gas supply.

One of the most important developments in natural gasoline manufacture during the year has been the portable plant. Many of the new plants installed during the year and a large number of those now being put in are of this type.

TABLE NO. 2

	No. Plants	Capacity
1924	1,012	3,396,961
1925	1,143	4,652,561
1926	1,056	5,024,090
Mid-Continent Only		
1924	547	2,478,555
1925	600	2,939,950
1926	533	3,266,140

While these portable plants are small and their outputs do not swell materially the total production of the country, their installations mean that permanent and larger plants will follow. These new permanent plants, which will be erected, are expected to result in still greater expansion of the natural gasoline industry during the coming year.

Due to the nature of the portable plants gasoline manufacturers in most cases are using them mostly as emergency equipment to conserve the gas in newly opened fields until permanent plants can be erected. Portable plants can be installed in a comparatively short time and can be moved readily from one field to another.

The expansion of the natural gasoline manufacture in Arkansas is particularly noticeable. Although in that state the industry has been limited, there now are five large plants under construction. As there are only a total of 17 plants, the five plants building stand out conspicuously. In Oklahoma 14 new plants are building but this is comparatively small compared with the 321 plants in the State.

In the accompanying tables is shown the natural gasoline industry in detail. The list of companies shows all natural gasoline plants in the country on June 1, their type, capacity and status, whether operating, shut down or building. All plants, which in all probability will not be operated again, have been omitted from the list.

In Table No. 1, the natural gasoline plant operations on June 1 are summarized, showing the total number of plants in the country by states, their capacities, the number of plants operating, plants building, the number of absorption plants, the compression plants and the capacities of each type. In Table No. 2 is shown the total number of plants and the total capacities for 1924, 1925 and 1926, both for the entire country and the Mid-Continent separately.

TABLE NO. 1

States—	Total Plants	Total Capacity	†Plants Oper'g	Plants Bldg.	Absp. Plants	Comp. Plants	Absp. Plant Capacity	Comp. Plant Capacity
Mid-Continent:								
Arkansas	17	117,600	12	5	13	4	110,800	6,800
Kansas	18	124,800	16	2	14	4	106,000	18,800
*Louisiana	51	213,450	48	3	39	12	187,100	26,350
Oklahoma	321	1,834,600	307	14	166	155	1,396,850	437,750
*Texas	126	975,690	119	7	89	37	741,200	234,490
Total Mid-Continent	533	3,266,140	502	31	321	212	2,541,950	724,190
Other States:								
California	154	1,204,960	152	2	144	10	1,167,110	37,850
Illinois	59	38,435	59	...	...	59	.....	38,435
Kentucky	17	18,300	17	...	3	14	4,300	14,000
New York	3	2,000	3	...	2	1	1,700	300
Ohio	18	4,825	18	...	6	12	3,025	1,800
Pennsylvania	135	87,475	135	...	15	120	44,650	42,825
West Virginia	128	292,455	128	...	51	77	251,800	40,655
Wyoming	9	109,500	9	...	5	4	40,000	69,500
Total other states	523	1,757,950	521	2	226	297	1,512,585	245,365
Grand total	1,056	5,024,090	1,023	33	547	509	4,054,535	969,555

*No plants out of Mid-Continent.
†Includes 25 plants temporarily shut down.

NATURAL GASOLINE PLANTS BY STATES

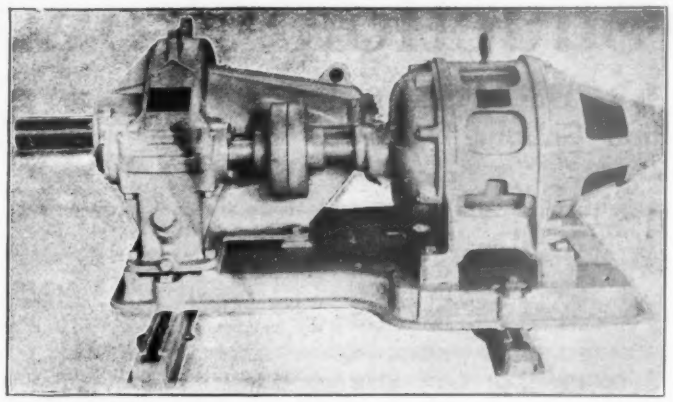
ARKANSAS

Company and main offices—	Plant Location (Nearest Town)	Type	Capacity (Gals.)	Status
Gilliland Oil Co., Tulsa, Okla.	Louann	Absp.	18,000	Op.
Gilmore (Forest E.) Co., Tulsa, Okla.	Norphlet	Absp.	3,000	Op.
Gulf Refining Co., Houston, Tex.	El Dorado	Absp.	4,000	Op.
Henderson Co., Tulsa, Okla.	El Dorado	Absp.	20,000	Op.
Imperial Oil & Gas Co., Shreveport, La.	El Dorado	Comp.	500	Op.
Lisbon Gasoline Co., Shreveport, La.	Lisbon	Absp.	5,000	Big.
Louisiana Oil & Ref. Corp., Shreveport, La.	Louann	Absp.	1,800	Op.
Magnolia Petroleum Co., Dallas, Tex.	Louann	Comp.	300	Op.
	Louann	Comp.	1,000	Big.
Natural Gas & Fuel Corp., El Dorado	El Dorado	Both	7,500	Op.
	Lamberton	Absp.	2,500	Op.
	Louann	Absp.	10,000	Op.
	Norphlet	Absp.	4,000	Big.
Simms Oil Co., Dallas, Tex.	Smackover	Absp.	5,000	Big.
Skelly Oil Co., Tulsa, Okla.	El Dorado	Absp.	5,000	Big.
Standard Oil Co. (La.), New Orleans, La.	El Dorado	Both	25,000	Op.
Stebbins Oil & Gasoline Co., Tulsa, Okla.	El Dorado	Comp.	6,000	Op.
Total			117,600	

CALIFORNIA

Ahlburg Gasoline Co., Los Angeles	Long Beach (2)	Absp.	3,000	Op.
American Gasoline & Ref. Co., Los Angeles	Inglewood	Absp.	10,000	Op.
American Gasoline Co., Los Angeles	Santa Maria	Absp.	2,000	Op.
Associated Oil Co., Los Angeles	Belridge (2)	Absp.	3,000	Op.
Balell Gasoline Co., Los Angeles	Maricopa	Absp.	2,500	Op.
Bankline Oil Co., Los Angeles	Long Beach	Both	20,000	Op.
Brea Canyon Oil Co., Los Angeles	Fullerton	Comp.	700	Op.

(Continued on Page 106)



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MOTOR DATA

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This unit is designed to accommodate the following complementary motors:

Make of Motor	Horse Power	Style No. Speed	Cycle	Frame
Westinghouse	15-35	600-1200	60	654C
	15-35	500-1000	50	654C
				760.1 C open
	20-50	600-1200	60	752 C enclosed
				760.1 C open
	20-50	500-1000	50	752 C enclosed
				770.1 C open
	25-65	600-1200	60	762 C enclosed
General Electric	30-15	1200-600	60	OMT 336-7
	30-15	1000-500	50	OMT 336-7
	50-20	1200-600	60	OMT 346
	50-20	1000-500	50	OMT 346

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MR. HUGHES' ADDRESS BEFORE OIL BOARD

(Continued from Page 98)

If production is curtailed, the price of oil products will most probably be increased, and plans for co-operation among owners, and any other plans of conservation, which have a result of that sort are not likely to be viewed with favor by reason of any averseness on the part of the public to the cheapness owing to overproduction or because of any general apprehension engendered by scientific estimates of supply.

The Board must reckon with this situation. My desire is simply to point out that if a policy of conservation is to be considered, it must be framed intelligently, within constitutional limits, and the price of it must be paid by a public which is willing to make sacrifices in the interest of future years.

Control of Production of Oil by the States

Nine-tenths of the petroleum production of the country is drawn from privately owned lands within the States. I do not propose to discuss at any length the prospects of the control of production of oil by the States, for several reasons: **First,**—because the curtailment of production in lands held in private ownership within the States would be of slight advantage to the country unless it were adopted in the States having the principal oil production; **second,**—because endeavors by legislation to curtail production would be injurious and unacceptable unless such regulation were substantially uniform; **third,**—because it is most improbable that the States could be led to take action which would interfere with production to any great extent within their respective borders and thus be regarded as limiting their prosperity; and **fourth,**—because the constitutional difficulties in interfering with the production of oil on private properties, so as to provide an effective limitation, would be serious.

Without entering into a discussion as to the nature of the proprietors' rights in oil producing areas, it is sufficient to say that it is well established that the surface proprietors within the gas field have a constitutional right of which they can not be deprived without compensation. As was said by the Supreme Court of the United States in **Ohio Oil Co.** vs. **Indiana,** 177 U. S. 190, 209:

"On the other hand, as to gas and oil the surface proprietors within the gas field all have the right to reduce to possession the gas and oil beneath. They could not be absolutely deprived of this right which belongs to them without a taking of private property."

State Regulation

The extent to which the State may go in regulating production is indicated by the cases of **Ohio Oil Co.** vs. **Indiana,** 177 U. S. 190, **Lindsley** vs. **Carbonic Gas Co.,** 220 U. S. 61 and **Walls** vs. **Midland Carbon Co.,** 254 U. S. 300. In the case of the **Ohio Oil Co.,** the restriction imposed by the Indiana statute, providing that it should be unlawful to permit the flow of gas or oil from a well to escape into the open air, without being confined within the well or proper pipes or other safe receptacle, for more than a stated period, did not deprive the owners of their property without due process of law, but was an exercise of the legislative power to prevent a destruction of the common property by one of the owners. In the **Lindsley** case, a State statute was upheld, forbidding a land owner engaged in collecting and vending as a separate commodity the carbonic acid gas contained in natural mineral waters existing in a common underground reservoir from pumping or otherwise artificially drawing, by means of wells on his property, unnatural quantities of such waters from the common source of supply, and wasting them to the injury or impairment of the rights of other proprietors. In the **Walls** case, as already stated, the principle was applied in sustaining the Wyoming statute which was designed to prohibit an extravagent or wasteful or disproportionate use of the natural gas of the State.

It has already been pointed out to the Board that the legislatures of oil producing States have enacted various laws of a regulatory sort intended to prevent waste. It would not be safe, however, to infer that laws which were not appropriately designed to prevent improper methods in extracting the oil, or to protect the interest of proprietors drawing from a common reservoir so that that action of one should not work a deprivation of the rights of others, but were directed to the prevention or curtailment of production itself, would be sustained in the absence of compensation to the owner who was thus deprived of the use of his property. Still less can it be assumed that a State would have the power to compel an owner to subject his rights to drill for oil on his property, not to regulations to prevent waste or for the purpose of preventing injury to other owners having a similar right, but, as has been suggested by some, to the will of the other owners as to whether or not drilling should take place; that is, to make the exercise of the owner's right dependent upon the wishes of other individuals not vested with governmental authority.

States Will Not Curtail Production

But as I have said, I deem it to be unnecessary to go into these questions as there seems to be small chance of legislation by the States to curtail production, and I suppose that a policy of conservation to be carried out by the States, in the enactment of statutes for the curtailment of production, would hardly be favored by anyone if the legislation were not substantially uniform. Those who have argued most earnestly and forcibly for legislation which would require unit operation of oil pools have said that the legislation desired for this purpose should be Federal legislation. One of the strongest advocates of this policy declares that—"We now have a hodge podge of laws made by the courts and passed by the States which are not uniform and in some instances prevent efficient operation." He urges that "few of the States have proper bureaus or staffs of experienced men to guide their legislative policies on oil production"; that the present need is "to rescind all present laws and pass one law providing for the unit operation of pools"; and it is said that the action which is needed "can only be secured by Federal legislation."

But whatever may be said on the various points that are so ably stressed in support of the policy of the Federal requirement of unit operation of pools, it still remains clear that such legislation, in time of peace, relating merely to production within the States (outside of the Indian lands) does not lie within the constitutional authority of Congress.

It may be added that if the oil producing States desire to promote a policy of conservation, aimed at preserving the oil in the ground until it is needed, and are not disposed, or are found to be without the constitutional power under the Fourteenth Amendment, to go to the extent of enforcing the common action of owners, or what is called the unit operation of pools, it would still be possible for them to promote voluntary co-operation, in the light of economic conditions, by qualifying or limiting the State statutes which prohibit such combinations. Here, as in the case of the regulation by Congress of interstate commerce, there is a test of the real desire of the people, that is, whether there shall be competitive production of oil, or an opportunity for co-operation among owners in order to conserve the oil in the ground; a co operation, of course, to be allowed only under conditions which would insure proper official scrutiny but still would be aimed at the curtailment of production rather than at the stimulation of production by insistence upon competitive effort.

Unless the Federal Government and the State Governments are willing to encourage voluntary co-operation, to deal

(Continued on Page 154)

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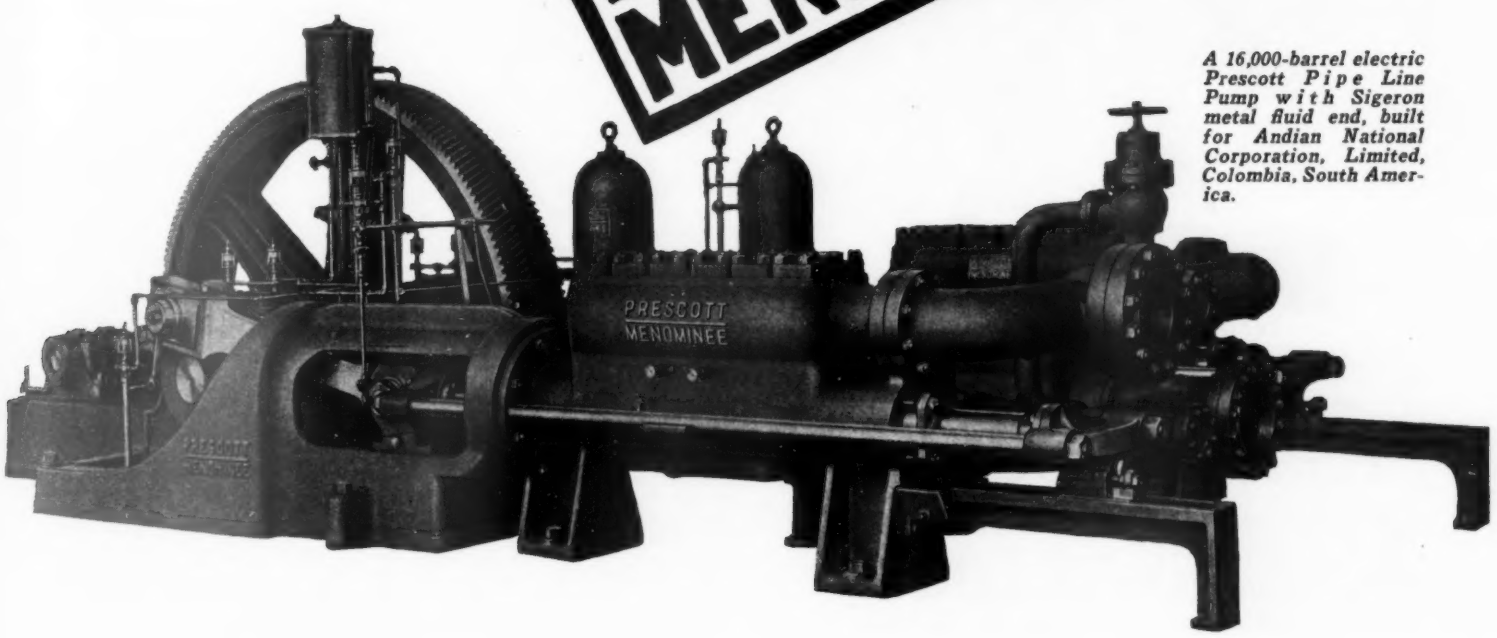

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TRY THERMIT ON OLD OIL WELLS; OIL CITY EXPERIMENT WATCHED

OIL CITY, Pa., May 29.—An experiment with the use of thermit in cleaning out of old wells was given its first trial here at the Veach Oil Co.'s No. 35 well on the old Mansfield lease at Trunkeyville. Whether the test will be successful will not be known for some time until the data shown by pumping the well has been gathered. If it is a success it may change entirely the methods of cleaning out old wells in this district. The test was the first of a series planned which will be carried out on all kinds of old wells and new ones as well.

The test was watched by George J. Veach, of this city, the owner of the lease; George Bannon, of the National Transit Pump & Machine Co., and the following representatives of the United Natural Gas Co.: C. L. Masters, of the engineering department; J. J. Montgomery, of the geological department; D. E. Conaway, of the geological department, and N. H. Benninger, of the Hampton field department, in addition to the employes of the lease.

The thermit experiment on the well came as the result of the work of Dr. H. T. Barnes of McGill University who used thermit in his operations on the ice gorge in the Allegheny River this year. Doctor Barnes holds patents on the material and the devices which would be used in connection with it for oil well activities.

Of course, the proof of whether the thermit accomplished real results and whether it can be used in the future successfully for this work will be furnished by the showing made by the well in the near future.

Three facts stand out prominently in the test made. Every evidence shows that the heat generated at the bottom of the hole was tremendous. The hole was 5 feet less in depth after the explosion of the shot. A bailer brought up a better showing of oil after about two hours of drilling and bailing than had been encountered in any of the new wells drilled in that territory or any of the old ones cleaned out.

The well used for the experiment was about 18 years old and had never been cleaned out. It made when first drilled in 30 bbls. of oil daily but the production of recent years had dwindled until the output was only about a quarter of a barrel. It was a third sand producer and the hole was 537½ feet deep.

In one way the character of the well interfered with any observations as to the possible effect of the shot. It had a great vacuum, which measured 28 points and this naturally sucked everything the opposite direction from the top of the well.

The container for the thermit was a tube 10 feet long of 3-inch diameter making possible a 50-pound load. This was placed on a small tube 5 feet long in the well thereby keeping the container 5 feet from the bottom of the well. The hole at the bottom of the well had been filled with crushed sand before the experiment was tried. An explosive charge was placed at the bottom of the tube and also at the top. On top of the explosive charge at the bottom of the tube was placed a compound the nature of which was not known to anyone present, having been sent for this purpose by Doctor Barnes. On top of it the thermit was placed until the tube was filled.

As there was no way of telling what would happen after the shot had been exploded there was a great deal of interest whether the setting off of the powder by electricity would be followed by an explosion when the thermit was ignited, the well being entirely free of fluid.

A muffled explosion of the powder followed almost immediately the making of the electrical connection. Two minutes later there was another explosion of the same character indicating that the thermit had been entirely burned and the end of the tube reached. Between the two there was no indication as to what was passing on under ground. There was not even any vapor to be seen by those near the top of the well and a camera which was ready for instant use was never given an exposure while the shot was burning.

When the electrical wire used to explode the charge and the wire to which it was attached were withdrawn from the hole it was found that only the top of the container remained, it being burned off entirely. A number of indications of the great heat which existed at the bottom of the hole was given as the wires were being pulled up. The electrical wire 150 feet from the bottom and all the remainder of the distance to the top of the charge was coated with a greasy substance. The insulation of the wire was burned off in many places and in some spots the copper had turned white in color.

The bailer was then run and it came up empty but despite the fact that it had been in the hole only a short time it was quite warm. The bit was then run for a time and when the bailer was next run it brought up a substance which was mainly sand but also contained some other substances. After the bit had been run again the bailer was sent down for the third and last time before the departure of the party from the well and when it was raised it contained a nice showing of oil, about two quarts. Other wells had made only a small showing, a mere film of oil, in that territory. A vacuum plant 500 feet from the well noticed a great deal of heat in the gasses passing through it about two hours after the thermit had been used. The heat of the bailer, of the bit and also the contents of the bailer increased as time passed and the last bailer brought to the surface contained water and oil which was very warm. These indications of the great heat were looked upon as encouraging by those who watched the experiment.

It is planned to make tests of this thermit arrangement on all varieties of wells in this locality as soon as possible. It will be tried out on some first sand wells and will be used on wells which contain fluid on the theory that an explosion may result from the contact of the burning thermit with the fluid.

CANADA IS CHECKING NEW OIL PROMOTION

CHATHAM, Ont., May 29.—Though it has not yet yeached anything like the figure attained in the Clagary boom, when upwards of 700 oil companies were incorporated, the rush to Ottawa for oil and mining incorporations has reached around 150.

Delay in incorporation has been due to the deluge of applications and the suspicion that promoters of some contemplated concerns are more interested in the sale of "wildcat" shares than in actual drilling. As a precaution, the announcement has been made by Ernest Lapointe that some companies will be granted incorporation only on condition that shares of stock may be sold without nominal or par value. This does not affect companies already promised incorporation.

It is planned by the Dominion Government to tighten the restrictions on oil companies. The Alberta Provincial Government has asked that companies operating under Dominion charter be subjected to the jurisdiction of the Alberta Public Utilities Board. The Dominion Government is not disposed to grant this, feeling that Dominion incorporations do not get a "fair deal" from the provinces, but it is planned to enforce rigidly provisions of existing legislation to protect investors.

Apparently court decisions have definitely established that provincial "blue sky" laws cannot apply to companies operating under Dominion charters. The policy has been adopted of restricting Dominion incorporation to companies operating in more than one province, but this stipulation seems to be easily evaded.

Sivyer Castings can be forged and welded

SIVYER S CASTINGS
DEPENDABLE

An oil refinery junction box casting—cast in Sivyer Electric Steel

Defeating Breakage and Leakage—with Interior Soundness

For those parts that must withstand extreme pressures and strains, manufacturers are logically turning to Sivyer Electric Steels. The junction-box casting shown above is such a part. In service it is called upon to withstand severe hydraulic pressures—that can range as high as 2000 pounds. To defeat leakage and breakage under such terrific pressures calls for an exceptional interior soundness. The metal must be non-porous and it must be free from those hidden defects that cause failure under strain. Sharply varying and complicated metal sections add to the difficulties of providing close-grained, "shrink-free" castings. Where casting demands are so rigid, manufacturers naturally turn to Sivyer, as was done in this case. Careful foundry practice, plus the close-grained, non-porous texture of Sivyer Steel provides assurance against breakage and leakage in service. The user of the junction box illustrated says this of the 337 castings Sivyer has shipped him: "Up to the present time we have not found a single leak in testing any of the castings."

Sivyer is often given the responsibility of casting new and untried parts and of developing new methods to eliminate trouble on old parts. Many parts formerly made in other metals and by other methods have been replaced by Sivyer Steels — at a decided advantage to the casting user.

If you are having trouble with parts failing in service — with high rejections — excessive machining, or if you are developing new and untried parts — Sivyer Electric Steels and Sivyer methods may furnish the solution for your problem. We will gladly make recommendations on any part without obligating you. Merely SEND BLUE PRINTS.

Mid-Continent Office
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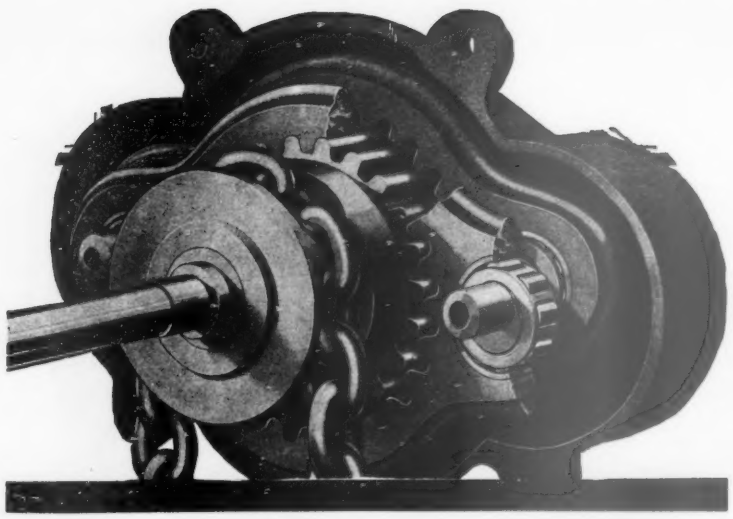
Fort Worth, Texas

SIVYER STEEL

SIVYER STEEL CASTING COMPANY, MILWAUKEE



Inside Facts!

Before you invest in an ordinary hoist investigate the *inside facts* of CYCLONE HOISTS. You will find that CYCLONE HOISTS are different and that there are good *reasons why* they are different. For instance—

CYCLONE HOISTS operate on the exclusive gyrating principle whereby double eccentric shafts impart a *gyrating* motion to two yokes which mesh with the lift gear at directly opposite points. This principle keeps more than twice the usual number of lift gear teeth always in mesh, assuring smooth operation with a minimum of vibration and utmost durability. *No other hoists are like that!*

CYCLONE HOISTS are built on the exclusive single unit principle whereby sizes are increased by increasing each part, thereby maintaining the same simple, compact construction in all capacities. *No other hoists are like that!*

Compare every other feature of CYCLONE HOISTS with ordinary hoists and let your judgment be your guide. To make it easy for you to investigate before you invest, CYCLONE HOISTS will be sent for a 30 or 60-day FREE TRIAL. Fair offer, isn't it?

Sold by Leading Oil Well Supply Houses

THE CHISHOLM-MOORE MFG. CO.
Cleveland, Ohio

Branches: New York Chicago Pittsburgh

"Cyclone" Hoists

High-speed, smooth operation, and durability have established a world-wide reputation for "CYCLONE" HOISTS. Capacities ¼ to 12 tons. Illustration at left.

"Matchless" Trolleys

Easiest to start—easiest to keep going — these trolleys have exclusive features of construction which never fail to win the approval of those *who know the best when they see it.* The view at the right illustrates a "Matchless" Trolley fitted with a "Cyclone" Hoist, an unbeatable combination.

CHISHOLM-MOORE
OVERHEAD HOISTS CRANES TROLLEYS TRACK SYSTEMS

COMPANIES OPERATING IN COLOMBIA, EITHER DRILLING OR EXPLORATION

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., May 29.—The development of petroleum interests in Colombia, so far as actual oil development is concerned, are largely centered in the Tropical Oil Co., a subsidiary of the Standard Oil Co. of New Jersey. A commercial agent recently communicating with his home office in the United States expressed this fact by saying: "Any American oil equipment concern getting all of the business of the Tropical Oil Co. will at this time have about 90 per cent of all such equipment business in Colombia."

This same writer comments upon the astounding ignorance of oil people of Bogota regarding the names of exploiting and exploration oil companies in Colombia. It seems that the Government of Colombia does not show much activity in the publication of news of this kind, so that most of what can be learned of companies that enjoy concessions there is picked up in a very unsatisfactory manner. Even the list of such companies available at the Ministry of Industries appears to be incomplete. The Tropical Oil Co. is the only one given any prominence for actual exploitation work.

There are many companies engaged in exploration or that are in possession of concessions authorizing exploration some of which have not been greatly availed of.

Among these companies is the Richmond Petroleum Co., of Barranquilla, credited as being a subsidiary of the Standard Oil Co. of California, which is now reaching out for foreign production.

The Latin American Petroleum Corp. of Cartagena, Colombia, is a subsidiary of the Transcontinental Oil Co., the headquarters of which are at Tulsa, Okla.

Another subsidiary of the Continental Oil Co. is the Mid-Colombia Oil Co. of Honda.

The Colombia Syndicate, Ltd., of Bogota is an independent American corporation so far as ownership is concerned.

Another company operating in Colombia is the Coastal Oilfield of Colombia, Ltd., with headquarters at Cartagena. The ownership of this company does not appear to be clearly defined.

All of the foregoing companies are engaged in exploration work or are entitled to be so engaged.

Active Drilling

A number of other companies are organized for exploration and exploitation and are actively drilling for oil. Chief among these is the Tropical Oil Co. The Richmond Petroleum Co. is doing drilling and the Leonard Oil Development Co. with principal offices in Oliver Building, Pittsburgh, Pa., is drilling at Puerto Wilches.

The Lobitos Oil Co. of Bogota is reported to have stopped active drilling work and has some tapped wells in the Carare region. This is an English company and it is reported to have had the misfortune to come into possession of some worthless titles.

The Andian National Corp., Ltd., 342 Madison Avenue, New York City, is reported to be of considerable interest to American equipment sellers. This company is building the oil pipeline from Cartagena to Barranca Bermezia which is to be extended to Honda. The local operating headquarters of this company is in Cartagena.

It is stated that the exploration companies are of interest only in respect to their potentialities for the purchase of equipment so far as concerns the interests of equipment companies in the United States.

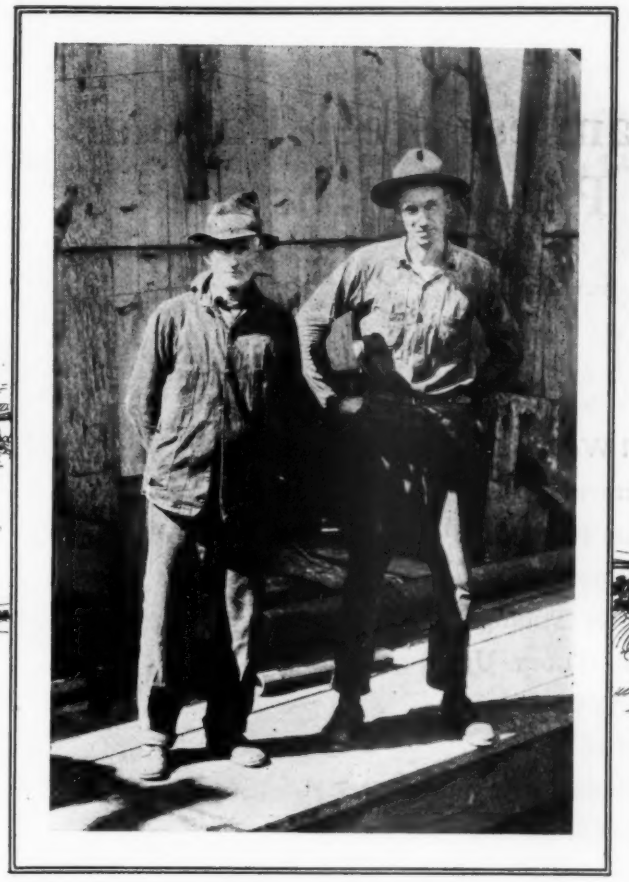
Exploration Companies

The following list gathered by personal inquiry both in government circles and otherwise is believed by the correspondent writing from Colombia to be exceptionally complete in respect to exploration companies with potentialities for the purchase of drilling equipment:

South American Gulf Oil Corp., subsidiary of the Gulf Oil Co. of Pittsburgh, Pa. This company recently purchased rights from Henry L. Doherty and Co., 60 Wall Street, New York City, these rights related to the Barco Concession. This concession was cancelled in February by the Ministry of Industries, due to alleged noncompliance with the contract. The representatives of this company in Bogota are, it is reported, there acquiring property. They are protesting the action of the Ministry of Industries and should they sustain their contention for further privileges, it is said to be very probable that the most largely interested American groups in Colombia oil

(Continued on Page 160)

—Copyright by S C A D T A Scientific Dept., Bogota, Colombia.
Airplane view of the plant of the Tropical Oil Co. at Barranca Bermeja, Colombia.



To Men — such as these

A GOOD WIRE ROPE MEANS A JOB WELL DONE, WITH A MINIMUM OF TIME AND LABOR;

THAT MEANS HAZARD

Distributed in Oklahoma, Kansas and the Panhandle of Texas by

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BOVAIRD

A good name to tie to~

Seamless Steel Tubular Products for the Oil Country

Oil Well Tubing, 2-in., 2½-in., 3-in.
External Upset Tubing, 2-in., 2½-in., 3-in.
Line Pipe, up to 4½ inches.
Refinery Piping, 1-in. to 4½-in.
Bailer Tubing
Still Tubes, Upset or Plain
Tank Car Piping
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Tubular Structural Material
Special Tubing

Special attention is called to the Seamless Steel Pipe (iron pipe sizes 1-in. to 4½-in.) offered by this company. The same advantages of seamless steel which have led to the widespread adoption of this material for oil well tubing, high-pressure boiler tubes and still tubes, are now available for various piping installations.

THE BABCOCK & WILCOX TUBE CO.

Works, Beaver Falls, Pa.

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85 Liberty St., New York, N. Y.

Branch Sales Offices:

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DENVER
435 Seventeenth St.

NEW ORLEANS
344 Camp St.

HOUSTON
1011 Electric Bldg.

DALLAS
2001 Magnolia Bldg.

SAN ANTONIO
511 Builders Exch. Bldg.

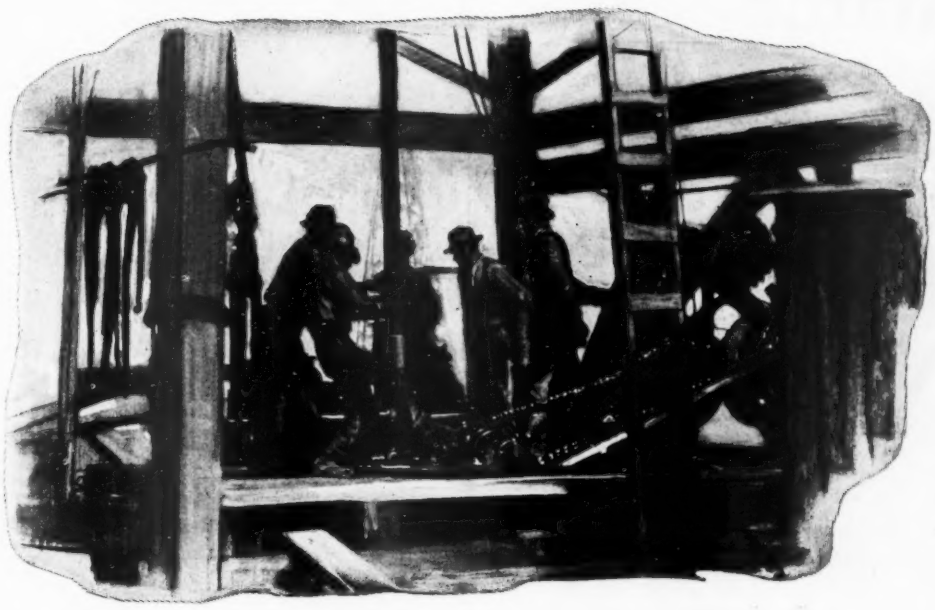
NATURAL GASOLINE PLANTS BY STATES

(Continued from Page 99)

Company and main offices—	Plant Location (Nearest Town)	Type	Capacity (Gals.)	Status
California Petroleum Corp., Los Angeles	Huntington Beach	Absp.	5,000	Op.
	Long Beach	Absp.	16,000	Op.
	Montebello	Absp.	1,000	Op.
	Santa Fe Springs	Absp.	15,000	Op.
Calumet Oil Co., Los Angeles	Fillmore	Comp.	700	Op.
Canadian Pacific Oil Co., Los Angeles	Midway	Absp.	200	Op.
Central Oil Co., Los Angeles	Huntington Beach	Absp.	250	Op.
	Whittier	Absp.	400	Op.
Cowen Oil & Refining Co., Los Angeles	Rosecrans	Absp.	5,000	Op.
Dabney Oil Syndicate, Los Angeles	Long Beach	Absp.	1,800	S.D.
Export Refining Corp., Los Angeles	Torrance	Absp.	20,000	Op.
Fellows Gasoline Co., Los Angeles	Santa Fe Springs	Comp.	15,000	Op.
Field (O. C.) Gasoline Corp., Los Angeles	Huntington Beach	Absp.	10,000	Op.
Fullerton Oil Co., Fullerton	Brea Canon	Both	4,000	Op.
General Petroleum Corp., Los Angeles	Brea	Absp.	10,000	Op.
	Los Angeles	Absp.	8,000	S.D.
	Santa Fe Springs	Absp.	22,000	Op.
	Signal Hill	Absp.	9,000	Op.
	Ventura	Absp.	11,000	Op.
Gilmore Oil Co., Los Angeles	Hollywood	Comp.	600	Op.
Granlan Absorption Co., Los Angeles	Midway	Absp.	1,000	Op.
Guardian Gasoline Corp., Los Angeles	Maricopa	Absp.	2,000	Op.
Holly Oil Co., Los Angeles	Huntington Beach	Absp.	5,000	Op.
Honolulu Consolidated Oil Co., Los Angeles	Midway	Both	25,000	Op.
Hurley-Smith, Los Angeles	Los Angeles	Absp.	900	Op.
Interstate Oil Co., Los Angeles	Maricopa	Comp.	1,000	Op.
La Habra Gasoline Co., Los Angeles	Brea	Both	5,000	Op.
Lomita Gasoline Co., Los Angeles	Long Beach	Absp.	20,000	Op.
Long Beach Gasoline Co., Long Beach	Long Beach	Absp.	3,000	S.D.
Lovell Gasoline Co., Los Angeles	Midway	Both	3,000	Op.
	Torrance	Absp.	5,000	Op.
Mosier, M. H., Los Angeles	Huntington Beach	Absp.	2,000	S.D.
National Products Co., Los Angeles	Midway	Absp.	3,000	Op.
North American Oil Consolidated, Los Angeles	Midway	Absp.	2,500	Op.
Norwalk Co. (Gen. Pet.), Los Angeles	Norwalk	Absp.	30,000	Op.
Olig Crude Oil Co., Los Angeles	Midway	Absp.	200	Op.
Olinda Gasoline Co., Los Angeles	Olinda	Comp.	5,000	Op.
Pacific Gasoline Co., Los Angeles	Athens	Absp.	7,500	Op.
	Brea	Absp.	3,000	Op.
	Dominguez	Absp.	5,000	Op.
	Elk Hills (2)	Absp.	9,500	Op.
	Fellows	Absp.	4,000	Op.
	Huntington Bh. (2)	Absp.	20,000	Op.
	Inglewood (2)	Absp.	11,000	Op.
	Kerto	Absp.	7,500	Op.
	Long Beach (3)	Absp.	25,000	Op.
	Midway (8)	Absp.	89,000	Op.
	Santa Fe Spgs. (2)	Absp.	19,000	Op.
	Sunset Field	Absp.	4,000	Op.
	Ventura (3)	Absp.	31,000	Op.
Pacific National Gasoline Co., Los Angeles	Athens	Absp.	12,000	Op.
	Huntington Beach	Absp.	7,000	Blg.
	Long Beach	Absp.	7,000	Op.
	Rosecrans	Absp.	12,000	Op.
	Santa Fe Spgs.	Absp.	4,000	Op.
	Ventura	Absp.	15,000	Blg.
Pan American Petroleum Co., Los Angeles	Elk Hills	Absp.	4,500	Op.
	Long Beach	Comp.	5,000	Op.
	Torrance	Absp.	3,500	Op.
Petroleum Co., Los Angeles	Coyote	Absp.	100	Op.
Petroleum Securities, Los Angeles	Inglewood	Absp.	6,000	Op.
Producers Gasoline Corp., Los Angeles	Athens (3)	Absp.	25,000	Op.
Rancho La Brea Oil Co., Los Angeles	Los Angeles	Both	1,500	Op.
Redondo Co., Los Angeles	Torrance	Absp.	3,000	Op.
Reservoir Hill Gasoline Co., Los Angeles	Long Beach	Absp.	7,000	Op.
Rex Gasoline Corp. (Signal), Los Angeles	Long Beach	Absp.	6,000	Op.
Rice Ranch Oil Co., Los Angeles	Orcutt	Absp.	3,500	Op.
Richfield Oil Co., Los Angeles	Maricopa	Absp.	3,000	Op.
Rio Grande Oil Co., Los Angeles	Santa Fe Spgs.	Absp.	3,000	Op.
Ryan & Hacket, Los Angeles	Long Beach (2)	Absp.	500	Op.
	Rosecrans	Absp.	3,000	Op.
Sentinel Oil Co., Los Angeles	Torrance	Absp.	3,100	Op.
Shell Co. of California, Los Angeles	Dominquez	Absp.	20,000	Op.
	Fullerton (2)	Absp.	12,000	Op.
	Long Beach	Both	65,000	Op.
	Santa Maria	Absp.	3,000	Op.
	Ventura (2)	Absp.	30,000	Op.
Signal Gasoline Co., Inc., Los Angeles	Long Beach	Absp.	10,000	Op.
Signal Gasoline Corp., Los Angeles	Signal Hill (2)	Absp.	20,000	Op.
Signal Hill Gasoline Co., Los Angeles	Dominquez	Absp.	16,000	S.D.
	Signal Hill (2)	Absp.	15,000	Op.
Standard Oil Co. (Calif.), Los Angeles	Huntington Beach	Both	25,200	Op.
	Inglewood	Both	7,000	Op.
	La Habra	Both	22,000	Op.
	Lost Hills	Both	1,630	S.D.
	Montebello	Both	2,900	Op.
	Newhall	Both	800	Op.
	Placentia	Both	9,300	Op.
	Santa Fe Springs	Both	20,000	Op.
	Taft	Both	2,600	Op.
	Taft (2)	Both	21,240	S.D.
	Taft (2)	Comp.	850	S.D.
	Torrance	Both	1,700	Op.
	Tupman	Both	1,630	Op.
	Tupman	Both	500	S.D.
	Wheeler Ridge	Both	560	Op.
St. Helens Petroleum Co., Ltd., Los Angeles (London, England)	Brea	Absp.	200	Op.
	Montebello	Absp.	2,000	Op.
	Taft (2)	Absp.	2,150	Op.
Sterling Gasoline Co., Los Angeles	Long Beach	Absp.	7,000	Op.
	Rosecrans	Absp.	5,000	S.D.
Titan Gasoline Co., Los Angeles	Long Beach	Absp.	2,500	Op.
Torrance Gasoline & Ref. Co., Los Angeles	Torrance	Absp.	8,000	Op.
Union Oil Co., Los Angeles	Brea	Absp.	2,000	Op.
	Dominquez	Absp.	40,000	Op.
	Huntington Beach	Absp.	7,500	Op.
	Los Angeles	Absp.	30,000	Op.
	Orcutt	Absp.	24,000	Op.
	Piru	Absp.	750	Op.
	Richfield	Absp.	18,000	Op.
	Santa Fe Springs	Absp.	12,000	Op.
United Oil Co., Los Angeles	Fellows	Absp.	3,000	Op.
	Huntington Beach	Absp.	8,000	Op.
United States Refining Co., Los Angeles	Davidson City	Absp.	15,000	Op.
Ventura Refining Co., Los Angeles	Santa Paula	Absp.	2,000	Op.
	Santa Paula	Comp.	9,000	Op.
West Coast Refining Co., Los Angeles	Richfield	Absp.	15,000	Op.
Western Gasoline & Ref. Co., Los Angeles	Dominguez (3)	Absp.	5,000	Op.
Total			1,204,960	

ILLINOIS

American Oil Development Co., Pittsburgh, Pa.	Robinson	Comp.	450	Op.
Arkansas Fuel Oil Co., Pittsburgh, Pa.	Robinson	Comp.	500	Op.
Associated Producers Co., Bradford, Pa.	Lawrence County	Comp.	100	Op.
	Robinson (8)	Comp.	1,000	Op.
Bell Brothers, Robinson	Crawford County	Comp.	130	Op.
	Cumberland County	Comp.	150	Op.
Big Four Oil & Gas Co., Pittsburgh, Pa.	Lawrence Co. (3)	Comp.	1,800	Op.
Brenneman & McDonnell, Lima, Ohio	Crawford Co. (2)	Comp.	1,000	Op.
Bruner (A.) & Co., Tulsa, Okla.	Lawrenceville	Comp.	300	Op.
Grace, Charles, Robinson	Crawford County	Comp.	100	Op.
Hiteshaw, W. B., Robinson	Crawford County	Comp.	200	Op.
Illinois Gasoline Co., Bridgeport	Bridgeport	Comp.	100	Op.
International Oil & Gas Co., Washington, Pa.	Crawford County	Comp.	2,000	Op.
Kennedy (W. C.) Co., Bradford, Pa.	Crawford Co. (4)	Comp.	400	Op.
Kewanee Oil & Gas Co., Robinson	Crawford Co. (5)	Comp.	500	Op.
	Lawrence Co. (2)	Comp.	150	Op.
Liberty Oil & Gas Co., Warren, Pa.	Oblong	Comp.	150	Op.
Lord (H. C.), Robinson	Oblong	Comp.	60	Op.
Mahutska Oil Co., Robinson	Robinson	Comp.	1,000	Op.
Mallory & Crawford, Bradford, Pa.	Crawford County	Comp.	500	Op.
Nolan & Lamberton, Tulsa, Okla.	Oblong	Comp.	100	Op.



Bits Made of Agathon Alloy Steel Reduce Drilling Delays

FREQUENT pulling and dressing of bits not only increases the cost of drilling tremendously but delays the striking of oil and the time when the investment becomes productive. Bits made of Agathon Steels often last three times as long in actual drilling without dressing than bits made of other steel. To continue to ignore these super-steels for bits is a lavish waste of money. Send for our Agathon Alloy Steel handbook and the assistance of our staff of expert metallurgists. No charge.

We have daily production in all kinds of Agathon Alloy Steels such as—

Nickel, Chrome-Nickel, UMA, Molybdenum, Chrome-Molybdenum, Nickel-Molybdenum, Vanadium, Chrome-Vanadium, Chromium, etc.

Deliveries in Blooms, Billets, Slabs, Hot Rolled, Heat Treated, and Cold Drawn Bars, Hot Rolled Strips, etc.

THE CENTRAL STEEL COMPANY, Massillon, Ohio

Swetland Bldg., Cleveland — Book Bldg., Detroit — Peoples Gas Bldg., Chicago
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303 W. P. Story Bldg., Los Angeles, Calif. — 401 West First St., Tulsa, Oklahoma

AGATHON STEELS

AGATHON
ALLOY STEELS

A Running Mate *for the* Unbeatable

Steelex & Bronzex Balls and Seats

Repelex!

For years producers and pumpers have placed the utmost confidence in STEELEX and BRONZEX BALLS AND SEATS—and now HOUGH has produced a running mate for them—a non-corrosive steel ball and seat that is called REPELEX—so constructed that it will withstand the erosive action of the acid and other strong elements found in so many wells. The same care in manufacturing REPELEX as in Steelex and Bronzex balls and seats—each ball and seat ground in pairs by our special machinery, tested and retested, packed in a special brown box with a gold and black label—each REPELEX BALL AND SEAT reaches the user ready to go to work. Try out REPELEX where acid and other strong elements have been eating away the efficiency of your other balls and seats—and remember that REPELEX is the name—ask for it by name and be assured that you will get the best non-corrosive steel ball and seat on the market—backed by Hough reputation that has been a quarter of a century in the making.

STEELEX BALLS AND SEATS scarcely need any introduction — our tremendous sales on this unit convince us that for its purpose it cannot be equaled. Steelex is made for use on those troublesome wells where excessive sand is encountered —in such wells STEELEX works long and efficiently — a glutton for punishment.

Every once in a while alkali or lodestone make the use of a steel ball or seat an impossibility. The answer is BRONZEX—a ball and seat that is utterly impervious to the effects of alkali and lodestone.

All three: REPELEX, STEELEX and BRONZEX ARE CARRIED IN STOCK BY ALL GOOD DEALERS—EVERYWHERE.

The Charles N. Hough Manufacturing Company
Franklin, Pennsylvania

"Products that cut down your underground overhead"

Company and main offices—	Plant Location (Nearest Town)	Type	Capacity (Gals.)	Status
Ohio Oil Co., Findlay, Ohio	Bridgeport	Comp.	9,000	Op.
	Casey	Comp.	1,750	Op.
	Robinson	Comp.	4,500	Op.
Phelan, M., Robinson	Crawford County	Comp.	100	Op.
Shoreman & Shoreman, Oil City, Pa.	Crawford County	Comp.	50	Op.
Snowden & McSweeney, New York, N. Y.	Bridgeport (3)	Comp.	1,800	Op.
Southern Oil Co., Pittsburgh, Pa.	Casey	Comp.	135	Op.
Splane, W. W., Oil City, Pa.	Robinson	Comp.	300	Op.
Stranahan & Cheuvront, Oblong	Oblong (3)	Comp.	150	Op.
Toomey, J. D., Robinson	Allendale	Comp.	100	Op.
	Robinson	Comp.	60	Op.
Vacuum Gasoline Co., Vincennes, Ind.	Lawrence Co. (2)	Comp.	3,500	Op.
Vincennes Oil & Gas Co., Vincennes, Ind.	Lawrence Co.	Comp.	6,000	Op.
Warner-Caldwell Oil Co., Titusville, Pa.	Oblong	Comp.	200	Op.
Wiser Oil Co., Sistersville, W. Va.	Robinson	Comp.	100	Op.
Total			38,435	

KANSAS

Amerada Petroleum Corp., Tulsa, Okla.	Keighley	Absp.	3,000	Op.
Barco Gasoline Co., Tulsa, Okla.	Peru	Comp.	1,000	Op.
*Barnsdall Oil Co., Tulsa, Okla.	Adamsville	Absp.	18,000	Op.
Empire Gasoline Co., Bartlesville, Okla.	Arkansas City	Absp.	10,000	Op.
	Caney	Absp.	10,000	Op.
	Green	Absp.	4,000	Op.
	Sallyards	Absp.	5,000	Op.
	Seeley	Absp.	6,000	Op.
	Teter	Absp.	6,000	Op.
	Thrall	Comp.	3,000	Op.
	Wellington	Absp.	8,000	Op.
Kansas Gasoline Co., Tulsa, Okla.	Winfield	Absp.	5,000	Op.
Lewis Gas Products Co., Tulsa, Okla.	Leon	Absp.	5,000	Op.
	Winfield	Absp.	6,000	Big.
Pep Gasoline Co., Kansas City, Mo.	Sedan	Comp.	1,800	Op.
Sinclair Oil & Gas Co., Tulsa, Okla.	Madison	Comp.	3,000	Big.
Tidal Refining Co., Tulsa, Okla.	Douglass	Absp.	10,000	Op.
Washington Development Co., Mt. Vernon, Ohio.	Wellington	Absp.	10,000	Op.
Total			124,800	

*Half interest with Marland Refining Co.

KENTUCKY

Central Kentucky Nat. Gas Co., Chambers Station	Chambers Station	Absp.	1,000	Op.
Coast Oil Co., Monticello	Monticello	Comp.	200	Op.
Cumberland Gasoline Corp., Cleveland, Ohio	Fixler	Comp.	4,000	Op.
Daugherty (C. E.) & Co., Monticello	Monticello	Comp.	200	Op.
Heck (W. B.) & Co., Owensboro	Monticello	Comp.	400	Op.
Kentucky Pipe Line Co. (Louisville Gas & Electric), Louisville	Winchester	Absp.	2,200	Op.
Porter & Bain, Monticello	Monticello (5)	Comp.	400	Op.
Superior Oil Corp., Lexington	Campton	Comp.	2,000	Op.
	Irvine	Comp.	3,000	Op.
Swiss Oil Corp., Lexington	Fixler	Comp.	2,500	Op.
United Fuel Oil Co., Ashland	Irvine	Comp.	1,000	Op.
Viking Gasoline Corp., Charleston, W. Va.	Means	Absp.	1,100	Op.
Wood Oil Co., Monticello	Monticello	Comp.	300	Op.
Total			18,300	

LOUISIANA

Arkansas Fuel Oil Co., Pittsburgh, Pa.	Homer	Comp.	5,000	Op.
Carson Carbon Co., Collinston	Doss	Absp.	1,000	Op.
Coltexo Corp., Monroe	Fairbanks	Absp.	1,000	Op.
Crown Central Petroleum Corp., Houston, Tex.	Homer	Comp.	500	Op.
DeSoto Gasoline Co., Houston, Tex.	Goss	Comp.	1,000	Op.
Dixie Oil Co., Shreveport	Pine Island	Both	3,000	Op.
Gilliland Oil Co., Tulsa, Okla.	Haynesville	Absp.	6,000	Op.
	Homer	Comp.	4,000	Op.
Gulf Refining Co., Houston, Tex.	De Soto	Absp.	2,000	S.D.
	Homer	Absp.	30,000	Op.
	Mooringsport	Comp.	8,000	Op.
Hanlon & Co., Houston, Tex.	Caddo	Comp.	200	Op.
Huber (J. M.) Co., New York, N. Y.	Swartz	Absp.	4,500	Op.
Louisiana Gas Co., Shreveport	Cedar Grove	Absp.	10,000	Op.
Louisiana Gas Products Co., Monroe	Dew Drop	Absp.	800	Op.
Louisiana Oil & Producing Co., Shreveport	Homer	Absp.	800	Op.
Monroe-Louisiana Carbon Co., Monroe	Hancock	Absp.	800	Op.
Natural Gas & Carbon Co., Monroe	Carbondale	Absp.	800	Op.
Ohio Oil Co., Findlay, Ohio	Cotton Valley	Absp.	3,000	Big.
	Haynesville (3)	Absp.	9,600	Op.
	Gilliam	Absp.	3,500	Op.
Pala Oil Co., Mooringsport	Mooringsport	Comp.	200	Op.
Palmer Oil Corp., Shreveport	Cotton Valley	Both	3,000	Big.
	Swartz	Absp.	800	Op.
Magnolia Petroleum Co., Dallas, Tex.	Gahagan	Comp.	1,500	Op.
Phillips Petroleum Co., Bartlesville, Okla.	Homer	Absp.	7,500	Op.
Reserve Natural Gas Co., Shreveport	Shreveport	Absp.	6,000	Op.
Smitherman & McDonald, Shreveport	Haynesville	Comp.	250	Op.
Southern Carbon Co., Monroe	Fairbanks	Absp.	3,500	Op.
	Fowler	Absp.	10,000	Op.
	Greenwood	Absp.	5,000	Big.
	Perryville	Absp.	2,000	Op.
	Spiker	Absp.	3,000	Op.
	Swartz	Absp.	8,500	Op.
Standard Oil Co. (Louisiana) New Orleans	Homer	Both	7,500	Op.
	Trees	Both	6,000	Op.
Texas-Louisiana Prod. & Carbon Co., Monroe	Carbonvale	Absp.	7,000	Op.
The Texas Company, Houston, Tex.	Brown	Comp.	700	Op.
	Russell	Comp.	2,500	Op.
	Saunders	Comp.	2,500	Op.
Union Gas Products Co., Monroe, La.	Swartz	Both	6,000	Op.
United Carbon Co., Monroe	Bastrop	Absp.	5,000	Op.
	Cargas	Absp.	5,000	Op.
	Crowdan	Absp.	4,000	Op.
	Lamkin	Absp.	5,000	Op.
	Swartz (2)	Absp.	10,000	Op.
	Swartz	Absp.	3,000	S.D.
United States Carbon Co., Bastrop	Bastrop	Absp.	2,500	Op.
Total			213,450	

NEW YORK

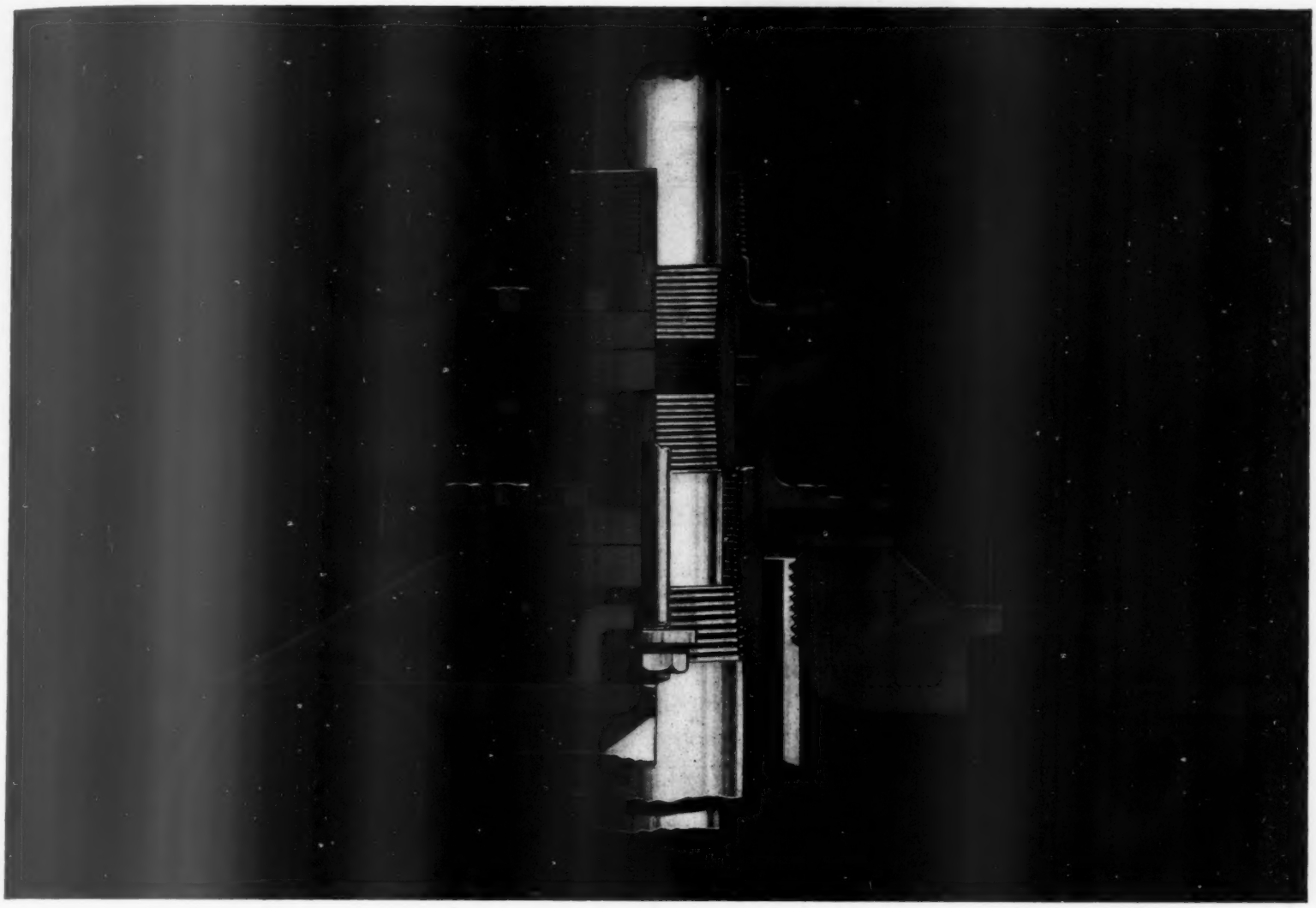
Empire Gas & Fuel Co., Wellsville	Andover	Both	200	Op.
Power Gasoline Co., Bradford, Pa.	Livingston	Comp.	300	Op.
Producers Oil Corp., Olean	Genesee	Absp.	1,500	Op.
Total			2,000	

OHIO

American Oil Development Co., Pittsburgh, Pa.	Deucher	Comp.	100	Op.
	Fly	Comp.	500	Op.
Braden, Spear & Depew Bros., Marietta	Steubenville	Comp.	300	Op.
Brewer Gasoline Co., Steubenville	Steubenville	Comp.	100	Op.
East Ohio Gas Co., Cleveland	Berea	Absp.	1,600	Op.
Heneghan & Hanlon, Sistersville, W. Va.	Knox	Comp.	100	Op.
Mildren Oil Co., Marietta	Deucher	Absp.	125	Op.
Muskingum Oil Co., Sistersville, W. Va.	Monroe County	Comp.	50	Op.
Reno Oil Co., Sistersville, W. Va.	Monroe County (3)	Comp.	250	Op.
Southern Oil Co., Pittsburgh, Pa.	Archer's Fork	Comp.	150	Op.
Sutton Brothers, Sistersville, W. Va.	Jackson (2)	Absp.	200	Op.
	Perry	Absp.	100	Op.
Tyler Oil Co., Sistersville, W. Va.	Monroe County	Comp.	100	Op.
Washington Development Co., Mt. Vernon	Mt. Vernon	Absp.	1,000	Op.
Wiser Oil Co., Sistersville, W. Va.	Lodi	Comp.	150	Op.
Total			4,285	

OKLAHOMA

A.C.F. Gasoline Co., Tulsa	Oilton	Comp.	800	Op.
Akin Gasoline Co., Tulsa	Bartlesville	Comp.	300	Op.



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3. Necessary for fire protection.
4. Necessary for conserving cellar space.

—and there are many other reasons

Regan Pipe Suspension and Control Head

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Gives a Protective Film

TIMES THICKER

than any Other!

Corrosion, the destructive and costly enemy of your pipe lines, is effectively balked by the thick protective coating made by one application of Eclipse Save-A-Line to the pipe surface.

This extra thick film, reinforced with asbestos fibre, elastic and enduring, protects for many years against the corrosive action of soils caused by moisture, lime, alkali or electrolysis. The life of thousands of miles of pipe line has been extended by the protecting film of Save-A-Line.

It can be applied without heating and by inexperienced labor. Only one application necessary.

Let us know your requirements. We will be glad to send you sample and quote you prices. If you have any particular difficulties peculiar to your soil or climate, our Service Department is at your disposal.

A Few of the Larger Users of Save-A-Line

The Shell Company
Lone Star Gas Company
Humble Pipe Line Company
The Gulf Pipe Line Company
Associated Pipe Line Company

The Eclipse Paint & Mfg. Co.
Cleveland, Ohio, U.S.A.

Dallas Detroit Philadelphia San Francisco
Denver Newark Pittsburgh Charlotte, N. C.

Company and main offices—	Plant Location (Nearest Town)	Type	Capacity (Gals.)	Status
	Bixby	Comp.	600	Op.
	Broken Arrow	Comp.	500	Op.
	Dewey (2)	Absp.	900	Op.
Amerada Petroleum Corp., Tulsa	Ardmore	Absp.	4,500	Op.
	Davenport	Absp.	3,000	Op.
	Healdton	Absp.	12,000	Blg.
	Mehan (3)	Absp.	10,000	Op.
	Okmulgee	Absp.	4,000	Op.
	Tonkawa	Absp.	13,000	Op.
	Wewoka (4)	Absp.	16,000	Blg.
	Yeager	Absp.	3,000	Op.
Amity Gasoline Co., Bartlesville	Alluwe	Comp.	4,500	Op.
	Dewey	Comp.	1,500	Op.
	Mounds	Comp.	350	Op.
Arrow Gasoline Co., Tulsa	Broken Arrow	Comp.	600	Op.
Arthur Oil Co., Tulsa	Sapulpa	Comp.	350	Op.
B & M Gasoline Co., Tulsa	Bartlesville	Absp.	1,200	Op.
Barco Gasoline Co., Tulsa	Healdton	Comp.	2,500	Op.
Barnsdall Oil Co., Tulsa	Avant	Absp.	2,800	Op.
	Beggs	Absp.	5,400	Op.
	Osage	Absp.	2,000	Op.
	Phillipsville	Comp.	4,300	Op.
	Turley	Absp.	3,200	Op.
Boynton Gasoline Co., Boynton	Boynton	Comp.	500	Op.
Bradstreet (J. G.) & Co., Muskogee	Muskogee	Comp.	300	Op.
Burgess Gasoline Co., Collinsville	Collinsville	Absp.	2,000	Op.
Bynum, T. B., Tulsa	Glenn Pool	Comp.	700	Op.
Carter Oil Co., Tulsa	Burbank	Absp.	20,000	Op.
	Cromwell (2)	Absp.	62,000	Op.
	Oilton	Comp.	4,500	Op.
	Wilson	Absp.	10,000	Op.
Chase Gasoline Co., Tulsa	Muskogee	Comp.	700,	Op.
Chesney (Chas.) Gasoline Co., Okmulgee	Okmulgee	Absp.	1,400	Op.
Chestnut & Smith Corp., Tulsa	Glenn Pool	Comp.	3,000	Op.
	Glenn Pool	Both	18,000	Op.
	Morris	Comp.	4,500	Op.
Comar Gasoline Co., St. Louis	Tonkawa (2)	Absp.	40,000	Op.
Comar Gasoline Co., St. Louis	Braman (2)	Comp.	12,000	Op.
Crosbie & Gillespie, Tulsa	Kiefer	Comp.	7,500	Op.
	Stonebluff	Comp.	600	Op.
Crown Central Petroleum Corp., Houston, Tex.	Broken Arrow	Both	1,500	Op.
	Drumright	Comp.	1,500	Op.
Dean Oil Co., Tulsa	Bartlesville	Comp.	500	Op.
Denver Producing & Refining Co., Okmulgee	Okmulgee	Absp.	1,000	Op.
DeSoto Gasoline Co., Houston, Tex.	Muskogee	Comp.	400	Op.
Devonian Oil Co., Tulsa	Chickasha	Absp.	2,000	Op.
	Kellyville	Absp.	7,500	Op.
	Stroud	Absp.	5,000	Op.
	Tulsa	Absp.	3,000	Op.
Dewey Portland Cement Co., Kansas City, Mo.	Dewey	Both	2,000	Op.
Diamond Oil & Ref. Co., Kansas City, Mo.	Delaware	Comp.	6,000	Op.
	Jenks	Comp.	2,200	Op.
	Jennings	Absp.	3,500	Op.
	Ochelata	Absp.	1,500	Op.
Dickanson, W. O., Tulsa	Broken Arrow	Comp.	500	Op.
Eagle Gasoline Co., Tulsa	Kiefer	Comp.	3,000	Op.
Eagle-Picher Lead Co., Henryetta	Henryetta	Absp.	6,000	Op.
Elm Gasoline Co., Tulsa	Morris	Comp.	300	Op.
Empire Gasoline Co., Bartlesville	Burbank	Both	8,000	Op.
	Okemah	Absp.	6,500	Op.
	Tallant	Absp.	10,000	Op.
Enfisco Oil Corp., Tulsa	Bixby (2)	Comp.	4,000	Op.
Fitzgerald-Withington, Tulsa	Watkins	Comp.	500	Op.
Foster & Davis, Inc., Bartlesville	Osage	Comp.	900	Op.
Foster (Dean E.) & Co., Tulsa	Deer Creek	Absp.	15,000	Op.
Foster Petroleum Co. and Norwood Oil Co., Bartlesville	Barnsdall	Absp.	3,500	Op.
Four Gasoline Co., Tulsa	Bixby	Comp.	700	Op.
Franchot (D. W.) & Co., Tulsa	Kiefer	Comp.	600	Op.
Gilliland Oil Co., Tulsa	Barnsdall	Absp.	4,000	Op.
	Shamrock	Absp.	10,000	Op.
Gilmore, Forest E., Co., Tulsa	Mannford	Absp.	7,000	Blg.
	Mounds	Absp.	8,000	Blg.
Glenn Gasoline Co., Tulsa	Glenn Pool (2)	Comp.	1,200	Op.
	Mannford	Comp.	400	Op.
	Oakhurst	Comp.	800	Op.
Glomar Gasoline Co., Tulsa	Jennings	Absp.	2,500	Op.
	Mannford	Comp.	800	Blg.
	Oakhurst	Absp.	1,500	Op.
Grimes Gasoline Co., Tulsa	Haskell	Absp.	1,000	Op.
Grimes & Gillespie, Tulsa	Sperry	Absp.	1,000	Op.
Gypsy Oil Co., Tulsa	Bristow	Absp.	3,570	Op.
	Cleveland (2)	Comp.	7,000	Op.
	Davenport (2)	Absp.	3,800	Op.
	Drumright	Comp.	7,350	Op.
	Jenks	Comp.	1,050	Op.
	Kiefer	Comp.	25,200	Op.
	Shamrock	Comp.	6,000	Op.
	Shidler (2)	Absp.	31,500	Op.
	Tonkawa	Absp.	15,960	Op.
Hales & Cassidy, Oklahoma City	Cushing	Absp.	2,000	Op.
Harland Gasoline Co., Tulsa	Barnsdall	Absp.	2,000	Op.
Harlis Oil & Gas Co., Tulsa	Avant	Comp.	1,500	Op.
Henderson Co., Tulsa	Delaware	Comp.	15,000	Op.
Highway Oil Ref. Corp., Tulsa	Bald Hill	Comp.	1,500	Op.
	Jenks	Comp.	500	Op.
	Leonard	Comp.	1,000	Op.
	Okmulgee	Comp.	600	Op.
	Red Fork	Comp.	500	Op.
Hope Const. & Ref. Co., Pittsburgh, Pa.	Belmont	Absp.	1,000	Op.
Imperial Gasoline Co., Tulsa	Drumright	Absp.	900	Op.
Invader Oil Corp., Muskogee	Bald Hill	Comp.	2,000	Op.
Junior Refining Co., Okmulgee	Okmulgee	Comp.	3,000	Op.
Kennier & Church, Tulsa	Bixby	Absp.	400	Op.
Lane Gasoline Co. (Wickstrom et al), Nowata	Nowata	Comp.	200	Op.
	Okemah	Absp.	800	Op.
Magnolia Petroleum Co., Dallas, Tex.	Bartlett	Comp.	200	Op.
	Cushing	Comp.	1,700	Op.
	Davenport	Both	3,500	Op.
	Davenport	Absp.	....	Blg.
	Duncan	Both	1,000	Op.
	Marimec	Both	4,000	Op.
	Morrison	Both	3,500	Op.
	Oilton (3)	Comp.	8,700	Op.
	Quay (2)	Comp.	4,600	Op.
	Shamrock	Both	5,000	Op.
	Shamrock (2)	Comp.	7,800	Op.
	Wewoka	Comp.	4,500	Op.
	Wirt (4)	Comp.	5,900	Op.
Marland Refining Co., Ponca City	Ponca City	Both	10,000	Op.
	Tonkawa (2)	Absp.	6,000	Op.
Masonreal Gasoline Co., Tulsa	Copan	Absp.	1,000	Op.
	Osage	Comp.	1,500	Op.
McMan Oil & Gas Co., Tulsa	Three Sands	Absp.	10,500	Op.
Meridian Petroleum Co., Tulsa	Sapulpa	Comp.	600	Op.
Midco Oil Corp., Tulsa	Billings	Comp.	1,000	Op.
	Dewey	Comp.	2,000	Op.
	Drumright	Comp.	400	Op.
	Oilton	Comp.	4,000	Op.
Mid-Continent Petroleum Corp., Tulsa	Bethel	Absp.	5,000	Op.
	Covington	Absp.	25,000	Op.
	Cromwell	Absp.	50,000	Op.
	Garber	Comp.	5,000	Op.
	Leonard	Comp.	3,000	Op.
	Morris (2)	Absp.	16,000	Op.
	Okmulgee	Comp.	3,000	Op.
	Shamrock	Absp.	15,000	Op.
	Stonebluff	Comp.	3,000	Op.
	Tulsa	Absp.	5,000	Blg.
	Weleetka	Absp.	6,000	Blg.
Mid-Kansas Oil & Gas Co., Tulsa	Cooper	Absp.	4,000	Op.
Moon Gasoline Co., Tulsa	Bixby	Comp.	1,800	Op.
	Muskogee	Comp.	1,500	Op.
Myers & Twichell, Okmulgee	Bartlett	Comp.	250	Op.
M.T.C. Oil Co. and Elbucan Oil Co., Tulsa	Mehan	Absp.	2,000	Op.
National Oil & Development Co., Tulsa	Bartlesville	Comp.	1,000	Op.
National Products Co., Pittsburgh, Pa.	Cleveland (2)	Comp.	2,000	Op.
	Mounds	Comp.	500	Op.
	Jennings	Absp.	1,400	Op.
	Oilton (2)	Comp.	1,400	Op.

XUM

Power and Speed insure greater Work Capacity

GMC TRUCKS
PRODUCT OF GENERAL MOTORS

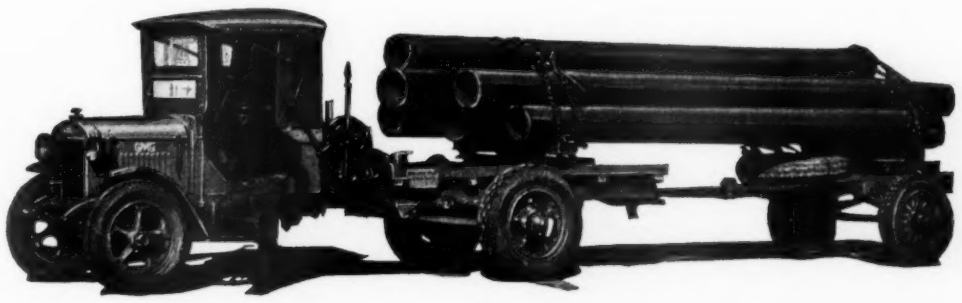
In the purchase of a motor truck, *Work Capacity* will be considered first. Your truck must be powerful enough to handle its loads on the steep hills and in heavy going, without sacrificing the speed that governs its earnings.

Every GMC model; from 1 ton to the 15 ton Big Brute Tractor-Truck; is powered with an engine of greater than average capacity. Yet GMC full pressure lubrication and the dual cooling system make speed possible and safe.

In the Big Brute heavy duty models, tremendous reserve power is provided through the GMC 53 horse power Engine and the famous GMC Two-Range Transmission, without uneconomical "over-powering" or sacrificing one iota of speed.

The engineering and manufacturing standards attained by General Motors make this exceptional GMC work capacity possible—*with economy.*

The Kunz Oil Co., Minneapolis, say: "We have 5 GMC Trucks, which we operate 12 months each year. They have proven very satisfactory. Two of them are 8 years old, and we are under the impression they will be good for another 8 years."



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The Pump That Works

Upside Down

NECO

It took a lot of nerve to break clear away from the formerly accepted design for pumps. It usually does take nerve to create any great advancement.

Neco Pumps represent a pumping principle so different that they were not, at first, greeted with open arms by the industry. Instead they created considerable skepticism. But that was so long ago we can talk and laugh about it now when at one time it was no laughing matter.

For those who do not know that Neco Pumps are radically different from other pumps we present this description of

The NECO Pump

It seats on top of old working barrels and when properly seated is ready for use. For new wells tubing seats are supplied.
The barrel is the moving part of the pump, **instead of the plunger, so that on the up stroke of the Pump the oil is drawn through the plunger pipe into the valve, and is discharged into the tubing on the down stroke.**
The lower valve is at the top of the plunger, **not at the bottom as in all other pumps.** ***This is the Neco exclusive feature,*** **which combined with the position of the upper valve at the top of the barrel, gives the Neco Pump three big advantages over other types of pumps.**

There isn't space left to tell you what these are but we'll be glad to send you the full explanation of the exclusive *Neco Advantages* that are derived from the *exclusive Neco construction.*

Stocked by Oil Well Supply Co.

Northrup Equipment Co.

Parkersburg, W. Va.

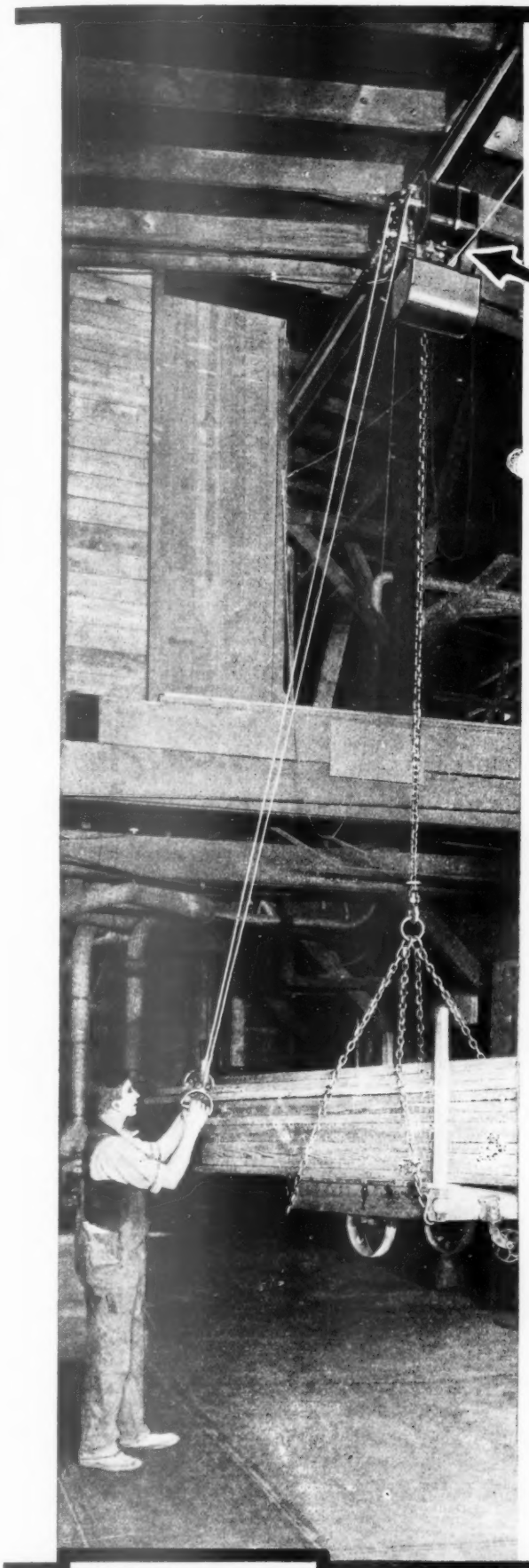
Fort Worth, Tex.
F. J. Ackman
Representative

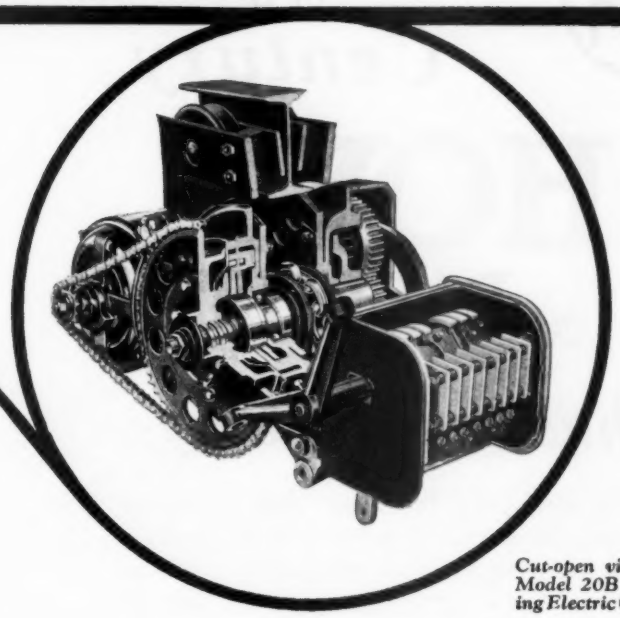
Nowata, Okla.
H. T. Torner
Representative

Better Pumping Service

Company and main offices—	Plant Location (Nearest Town)	Type	Capacity (Gals.)	Status
	Tabor	Absp.	1,800	Op.
Noble Oil & Gas Co., Tulsa	Quay	Absp.	3,500	Op.
Northland Gasoline Co., Tulsa	Sapulpa	Comp.	800	Op.
Oil State Gasoline Co., Tulsa	Beggs	Comp.	1,500	Op.
	Jenks	Comp.	2,500	Op.
	Yale	Both	3,500	Op.
Oklahoma Gasoline & Oil Co., Tulsa	Mounds	Absp.	2,100	Op.
	Stonebluff	Absp.	2,000	Op.
	Wynona	Absp.	1,000	Op.
Oklahoma Gasoline Plants, Inc., Oklahoma City	Oilton	Absp.	6,000	Op.
Okmulgee, Prod. & Mfgs. Gas Co., Okmulgee	Okmulgee	Absp.	1,500	Op.
Omar Gasoline Co., Wichita Falls, Tex.	Grandfield	Comp.	8,000	Op.
Orfic Gasoline Co., Tulsa	Cleveland	Comp.	2,500	Op.
	Jennings	Both	2,500	Op.
Owen Gasoline Co., Caney, Kans.	Barnsdall	Absp.	2,000	Op.
	Owen	Absp.	3,000	Op.
Peppers Gasoline Co., Enid	Covington	Absp.	5,000	Op.
Phillips Petroleum Co., Bartlesville	Beggs	Absp.	8,500	Op.
	Bryant	Absp.	15,000	Op.
	DeNoya	Absp.	40,000	Op.
	Fite	Absp.	3,000	Op.
	Norfolk	Absp.	4,500	Op.
	Pershing	Absp.	11,500	Op.
	Shidler (3)	Absp.	115,000	Op.
	Stroud	Absp.	6,500	Op.
	Wetumka	Absp.	78,300	Op.
	Wewoka	Absp.	4,500	Op.
Powers, M. F., Tulsa	Depew	Absp.	4,000	Op.
Powers & Quinlan, Tulsa	Beggs	Comp.	1,000	Op.
	Preston	Comp.	1,000	Op.
Pure Gasoline Co., Tulsa	Haskell	Comp.	1,500	Op.
Pure Oil Co., Columbus, Ohio	Depew	Comp.	4,000	Op.
	Drumright	Comp.	7,000	Op.
	Healdton	Comp.	1,300	Op.
	Mehan	Absp.	3,000	Op.
	Oilton	Comp.	5,000	Op.
	Okmulgee	Comp.	1,000	Op.
Richmond Gasoline Co., Tulsa	Red Fork	Comp.	....	S.D.
Robinson & Ice, Tulsa	Leonard	Comp.	250	Op.
Romarti Gasoline Co., St. Louis, Mo. (Mariand Roxana and Tidal)	Burbank	Absp.	12,000	Op.
Rotary Gasoline Co., Tulsa	Sperry	Comp.	1,000	Op.
Roxana Petroleum Corp., St. Louis, Mo.	Covington	Comp.	8,000	Op.
	Drumright	Absp.	8,000	Op.
	Stroud	Absp.	12,000	Op.
	Yale	Comp.	2,000	Op.
Sand Springs Home, Inc., Sand Springs	Bruner	Absp.	3,000	Op.
	Oilton	Comp.	8,000	Op.
Sapulpa Gasoline Co., Sapulpa	Sapulpa	Absp.	250	Op.
Shaffer Oil & Refining Co., Tulsa	Chapman	Absp.	3,500	Blg.
	Kellyville	Absp.	3,500	Blg.
Signal Gasoline Co., Inc., Los Angeles, Calif.	Mehan	Absp.	9,000	Op.
	Bristow	Absp.	5,000	Op.
	Bristow	Absp.	5,000	Blg.
Silurian Oil Co., St. Louis, Mo.	Avant	Comp.	1,200	Op.
Sinclair Oil & Gas Co., Tulsa	Bald Hill	Comp.	1,500	Op.
	Cleveland	Comp.	4,000	Op.
	Covington	Absp.	80,000	Op.
	Cromwell	Absp.	30,000	Op.
	DeNoya	Absp.	18,000	Op.
	Drumright	Comp.	6,000	Op.
	Hominy	Comp.	4,500	Op.
	Shamrock	Comp.	15,000	Op.
	Stonebluff	Comp.	350	Op.
Skelly Oil Co., Tulsa	Bristow (2)	Absp.	9,500	Op.
	Davenport	Absp.	25,000	Op.
	Lyman	Absp.	30,000	Op.
	Marimec	Absp.	4,500	Op.
	Slick	Absp.	13,000	Op.
	Stroud	Absp.	5,000	Op.
	Wynona	Absp.	8,500	Op.
Smith, T. K., Tulsa	Skiatook	Both	500	Op.
Southland Gasoline Co., Tulsa	Oilton	Comp.	2,000	Op.
	Sapulpa	Comp.	1,000	Op.
Standard Oil Co. (Indiana) Chicago	Drumright	Comp.	....	Op.
	Drumright	Comp.	....	S.D.
	Oilton	Comp.	33,000	Op.
	Shamrock	Comp.	....	Op.
Star Gasoline Co., Sapulpa	Eram	Comp.	800	Op.
Stebbins Oil & Gas Co., Tulsa	Boynton	Comp.	2,000	Op.
	Inola	Absp.	3,000	Op.
Sterling Oil & Gas Co., Tulsa	Sperry	Absp.	800	Op.
Test Oil Co., Tulsa	Dewey	Comp.	500	Op.
The Texas Company, Houston, Tex.	Barnsdall	Comp.	2,000	Op.
	Beggs (2)	Comp.	5,000	Op.
	Davenport	Absp.	15,000	Op.
	Drumright	Comp.	14,000	Op.
	Haskell	Comp.	3,200	Op.
	Kiefer	Comp.	11,000	Op.
	Oilton	Comp.	5,000	Op.
	Osage	Comp.	2,000	Op.
	Preston	Comp.	2,000	Op.
	Turkey Mountain	Comp.	600	Op.
Tidal Refining Co., Tulsa	Bartlett	Comp.	2,500	Op.
	Drumright	Absp.	15,000	Op.
	Garber	Comp.	3,000	Op.
	Glenn Pool	Absp.	15,000	Op.
	Keystone	Absp.	2,000	Op.
	Ochelata	Comp.	3,000	Op.
Tidal-Chelsea Refining Co., Tulsa	Chelsea	Absp.	8,000	Op.
Tiger Mountain Oil Co., Tulsa	Bartlett	Comp.	2,500	Op.
	Okmulgee	Comp.	4,000	Op.
Tower Gasoline Co., Oklahoma City	Cushing	Absp.	5,000	Op.
	Yale	Absp.	10,000	Op.
Transcontinental Oil Co., Tulsa	Alluwe	Absp.	1,500	Op.
	Bald Hill	Absp.	8,500	Op.
	Bristow	Absp.	10,000	Op.
	Haskell	Absp.	1,500	Op.
	Morris	Absp.	7,500	Op.
	Morris	Comp.	1,000	Op.
	Nowata	Absp.	1,500	Op.
Tribes Gasoline Co., Tulsa (and Aztec Gasoline Co.)	Jenks	Comp.	1,600	Op.
	Henryetta	Absp.	3,000	Op.
	Ingalls	Absp.	5,000	Op.
Twin State Oil Co., Tulsa	Quay	Comp.	2,000	Op.
United States Zinc Co., Sand Springs	Henryetta	Absp.	2,000	Op.
Valley Osage Oil Co., Tulsa	Tulsa	Comp.	500	Op.
Victor Gasoline Co., Tulsa	Bristow	Absp.	5,000	Op.
	Bristow	Comp.	1,300	Op.
	Davenport	Absp.	25,000	Op.
	Drumright	Comp.	4,000	Op.
	Covington	Comp.	2,500	Op.
Warner-Caldwell Oil Co., Titusville, Pa.	Nowata (3)	Absp.	1,700	Op.
Watchorn Oil & Gas Co., Oklahoma City	Morrison	Absp.	15,000	Op.
Wentz Oil Corp., Ponca City	Peckham	Comp.	5,000	Op.
	Tonkawa	Absp.	20,000	Op.
Wilcox Oil & Gas Co., Tulsa	Beggs	Comp.	4,000	Op.
	Beggs	Comp.	4,000	S.D.
	Bristow	Absp.	3,000	Op.
	Slick	Absp.	8,000	Op.
Wolverine Petroleum Corp., St. Louis, Mo.	Avant (2)	Comp.	11,000	Op.
	Bartlesville (2)	Comp.	5,500	Op.
	Copan	Comp.	1,500	Op.
	Wilson	Absp.	12,000	Op.
Woodshaw Gasoline Co., Nowata	Nowata	Absp.	200	S.D.
Total			1,834,830	
PENNSYLVANIA				
Allegany Gas Co., Port Allegany	East Sharon	Both	400	Op.
Alum Rock Gas Co., Alum Rock	Kern	Comp.	250	Op.
Associated Producers Co., Bradford	Kinzua	Comp.	150	Op.
Atlas Oil Co., Clarion	Clarion	Comp.	500	Op.
Banks Oil & Gas Co., Burgettstown	Petrolia	Comp.	120	Op.
Bizzard Gas Co., Emlenton	Emlenton	Comp.	100	Op.
Benninghoff, Davis et al. Petroleum Cent.	Petroleum Center	Comp.	100	Op.
Bradford Gasoline Co., Bradford	Cyclone	Comp.	600	Op.
Breen et al. Oil City	Pioneer	Comp.	800	Op.
Brundred Gasoline Co., Oil City	Rouseville	Both	1,000	Op.
Burgettstown Oil & Gas Co., Burgettstown	Burgettstown	Comp.	110	Op.

TRADE YALE MARK





Cut-open view of Yale Model 20B Ball Bearing Electric Chain Hoist

A Yale Model 20B Electric Hoist solves many handling problems

There's no need for a costly elevator installation on this job. A Yale Model 20B Ball Bearing Electric Chain Hoist and a length of standard I-Beam serve admirably to handle the bulky loads and transport them with promptness and safety—and at a considerable saving in money with a minimum plant investment.

Yale Model 20B Hoists are compact, flexible and the most efficient electric hoisting and handling units made.

Their compactness, due to the use of chain and the centralized ball bearing load sheave, and their strength and safety in the welded steel load chain, all-steel suspension and rugged construction are well known to hoist users everywhere. Every working part of the Yale Electric Hoist is readily accessible for inspection, yet at all times completely protected and easily lubricated.

As a result, Yale Hoists give exceptional service at far less than the average cost per ton or per year.

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Stamford, Conn., U. S. A.
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YALE Hoisting and Conveying Systems

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It takes more than formulas, more than processes, more than materials to do this. We have done it only by training workmen through more than half a century to super-skill.

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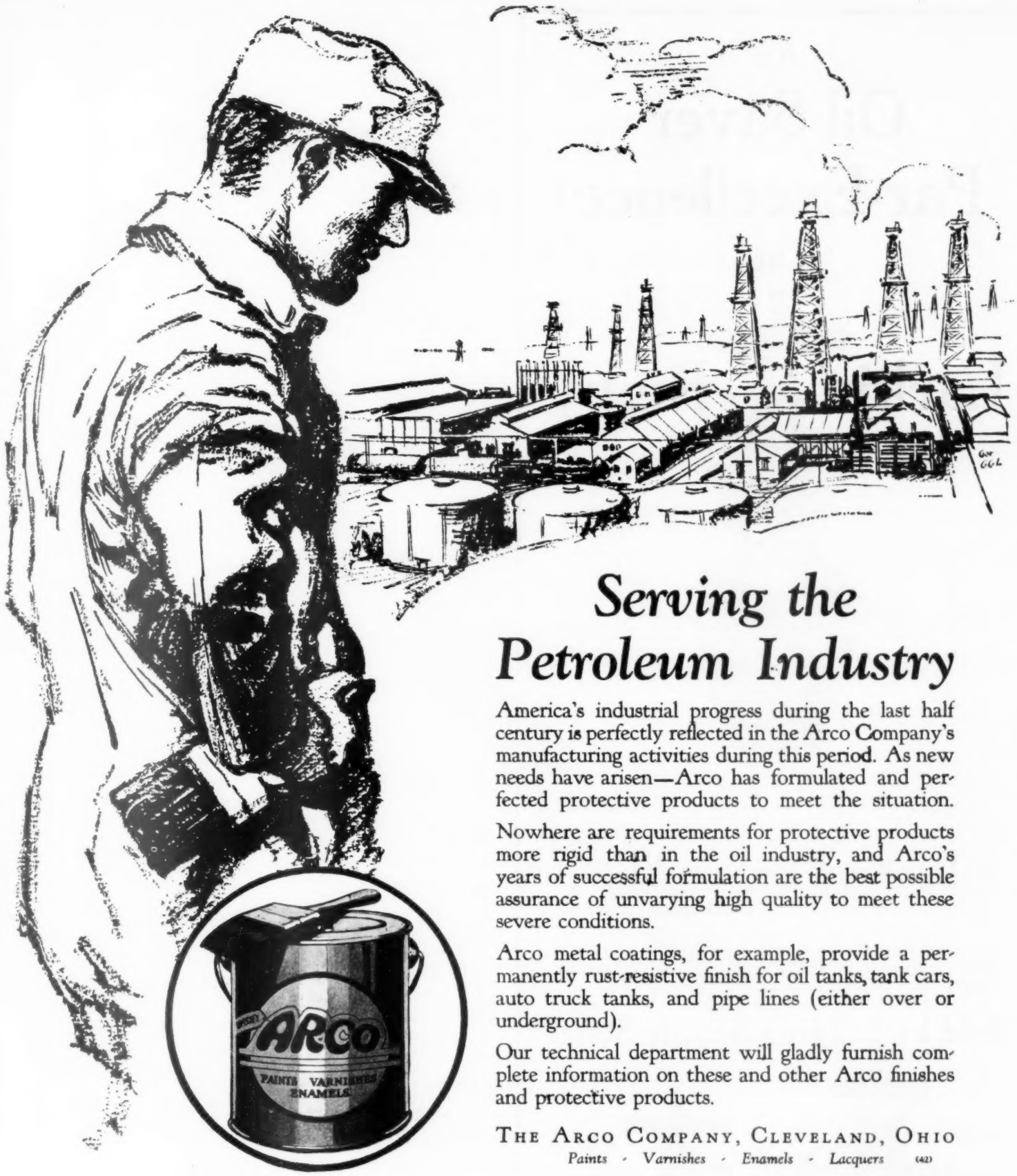
ST. LOUIS

NEW YORK CHICAGO DETROIT

F

Company and main offices—	(Nearest Town) Plant Location	Type	(Gals.) Capacity	Status
Burrell Oil & Gasoline Co., Pittsburgh	Waynesburg	Absp.	5,000	Op.
Carnegie Natural Gas Co., Pittsburgh	Waynesburg	Absp.	6,000	Op.
Carpenter (M. A.), Karns City	Karns City	Comp.	150	Op.
Carrie, Tracy Pioneer	Pioneer	Comp.	100	Op.
Clarendon Gasoline Co., Bradford	Clarendon	Comp.	2,500	Op.
Clinger Oil & Gas Co., Tidioute	Hastings Bridge	Comp.	700	Op.
	Tidioute	Comp.	800	Op.
Cochran, John S.	Sheffield	Comp.	500	Op.
Collins, E. S. (Cook Oil Lease), Kellettville	Mayburg	Comp.	800	Op.
Crown Central Petroleum Corp., Houston, Tex.	Tidioute	Comp.	500	Op.
Daugherty (C. R.) & Co., Butler	Herman Station	Comp.	30	Op.
	Oakdale	Comp.	100	Op.
	Petrolia	Comp.	55	Op.
Davidson & Farrel, Pioneer	Pioneer (2)	Comp.	500	Op.
Eaton (J. P.) Co., Grand Valley	Grand Valley	Comp.	600	Op.
Elliott Brothers, Chicora	Chicora	Comp.	5,000	Op.
Equitable Gas Co., Pittsburgh	Waynesburg (2)	Absp.	4,200	Op.
Faith Oil & Gas Co., Titusville	Tionesta	Comp.	300	Op.
Fleming, J. E., Titusville	Grand Valley	Comp.	300	Op.
Gesin & Shaw, Tidioute	Tidioute	Comp.	200	Op.
Glass, George N., McDonald	McDonald	Comp.	100	Op.
Gould (Nancy E.) & Son, Butler	Butler	Comp.	50	Op.
Hague & Co., Tidioute	Tidioute	Comp.	100	Op.
Haskell & Bayliss, Pleasantville	Butler County	Comp.	200	Op.
Haskell & Dunham, Pleasantville	Warren County	Comp.	100	Op.
Hays (E. F.) Sons and H. J. Myers, Chicora	Chicora	Comp.	50	Op.
Hess (I. C.), Millerstown	Fern	Comp.		Op.
	Pine	Comp.	850	Op.
	Pitch	Comp.		Op.
Highland Oil & Gas Co., Clarion	Miola	Comp.	175	Op.
Hodden, J. B., Sheffield	Sheffield	Comp.	500	Op.
Home Gas Co., Inc., Clarion	Miola	Comp.	200	Op.
Hope Const. & Ref. Co., Pittsburgh	Allegheny (2)	Absp.	5,000	Op.
	Clarion	Absp.	2,000	Op.
	Greene	Absp.	16,000	Op.
Hunter & Hawkey, Tidioute	Trunkeyville	Comp.	300	Op.
Iman, Fred T., Chicora	Chicora	Comp.	25	Op.
Jackson, F. W., Chicora	Chicora	Comp.	400	Op.
Jennings (E. H.) Brothers Co., Pittsburgh	Noblestown (3)	Comp.	1,700	Op.
Johnson & Myers, Tidioute	Tidioute	Comp.	250	Op.
Kapp & Brockelhurst, Tidioute	Tidioute	Comp.	225	Op.
Mars Co., Oil City	Hampton	Comp.	2,000	Op.
	Lewis Run	Comp.	1,500	Op.
	Shingle House	Comp.	600	Op.
Masters & Hess, Elmo	Elmo	Comp.	300	Op.
McCray & Espy, Petroleum Center	Petroleum Center	Comp.	300	Op.
Meter Gas Co., Oil City	Oil City	Comp.	1,000	Op.
Midland Oil Co., Petroleum Center	Petroleum Center	Comp.	200	Op.
Mongellyzinger & Exley, Oil City	Fertigs	Comp.	75	Op.
National Petroleum Co., Titusville	Grand Valley	Comp.	500	Op.
	West Hickory	Comp.	500	Op.
Norton & Jackson, Tidioute	West Hickory	Comp.	80	Op.
Parker, H. R., Chicora	Chicora	Comp.	100	Op.
Pencolo Gas & Oil Co., Denver, Colo.	Emlenton	Comp.	200	Op.
Pennsylvania Gas Co., Oil City	Roystone	Absp.	2,000	Op.
Pequignot, E. O., Tidioute	Trunkeyville	Comp.	500	Op.
	West Hickory (2)	Comp.	600	Op.
Pioneer Oil Co., Pioneer	Pioneer (2)	Comp.	600	Op.
Porter Brothers, Catfish	Catfish	Comp.	100	Op.
Potter Gas Co., Port Alleghany	East Sharon (2)	Absp.	1,400	Op.
President Oil Co., Emlenton	Emlenton	Comp.	100	Op.
	Parkers Land'g (2)	Comp.	100	Op.
	President (3)	Comp.	800	Op.
Reitz, M. W., Connoquenessing	Connoquenessing	Comp.	100	Op.
Riddle Farm Oil Co., Karns City	Karns City	Comp.	50	Op.
Royle & DeArme, Butler	Butler	Comp.	50	Op.
Sandy Oil & Gas Co., Shippenville	Shippenville	Comp.	400	Op.
Say, George K., Karns City	Karns City	Comp.	100	Op.
Service Gasoline Co., St. Marys	Mt. Jewett	Comp.	100	Op.
Sharpe, Rowe & Von Lackey Bros., Titusville	Titusville	Comp.	100	Op.
Sloan & Zook Co., Bradford	Eldred	Comp.	1,000	Op.
	Kane	Absp.	1,000	Op.
Southern Oil Co., Pittsburgh	Butler	Comp.	50	Op.
	Canonsburgh	Comp.	60	Op.
	Clarion	Comp.	50	Op.
	Elmo	Comp.	55	Op.
	Greece City	Comp.		S.D.
	Miola	Comp.	270	Op.
	Pleasantville	Comp.	40	Op.
South Penn Oil Co., Pittsburgh	22 Plants	Comp.	6,000	Op.
Splane, W. W., Oil City	Pleasantville	Comp.	400	Op.
Stephens, W. J., Grand Valley	Grand Valley	Comp.	100	Op.
Stoneham Gasoline Co., Stoneham	Stoneham	Absp.	500	Op.
Straub, J. W., Pioneer	Pioneer	Comp.	800	Op.
Swartzlander, H. L., & Co., Chicago	Butler County	Comp.	1,000	Op.
Thomas, R. L., Tidioute	Tidioute (2)	Comp.	200	Op.
Tionesta Gas Co., Tionesta	Tionesta	Absp.	150	Op.
Veach Oil Co., Trunkeyville	Trunkeyville	Comp.	150	Op.
Wahl, A. R., Evans City	Evans City	Comp.	200	Op.
Wheeler, D. H., Petrolia	Petrolia	Comp.	25	Op.
Woods, George L., Fern	Fern	Comp.	250	Op.
Total			87,445	
TEXAS				
American Gasoline Corp., Los Angeles, Calif.	Waskom	Absp.	1,500	Big.
	Breckenridge	Absp.	4,000	Op.
American Refining Co., Wichita Falls	Burkburnett (3)	Comp.	3,000	Op.
Arab Gasoline Corp., Philadelphia, Pa.	Eastland (2)	Absp.	25,000	Op.
Arkansas Fuel Co., Pittsburgh, Pa.	Arnot	Absp.	8,000	Op.
	Eastland	Absp.	10,000	Op.
Belby Natural Gas Co., Tulsa, Okla.	Electra	Absp.	8,000	Op.
	Iowa Park	Absp.	1,000	Op.
Big Lake Oil Co., Texon	Texon	Absp.	5,000	Op.
Boner, H. E., Wichita Falls	Bridgetown	Absp.	7,500	Op.
Boudinot Gasoline Corp., Denver, Colo.	Amarillo	Absp.	....	Big.
	Ranger	Absp.	6,000	Op.
Breckenridge Gasoline Co. (Hickok Producing Co.), Toledo, Ohio	Breckenridge	Absp.	7,000	Op.
Brooks & Hanlon, Inc., Tulsa, Okla.	Breckenridge	Absp.	34,000	Op.
Cannon Gasoline Co., Amarillo	Amarillo	Absp.	3,000	Op.
Chestnut & Smith Corp., Tulsa, Okla.	Breckenridge (4)	Absp.	70,000	Op.
	Eastland	Both	9,000	Op.
	Ranger (4)	Both	102,000	Op.
Consolidated Gasoline Co. (Hickok Producing Co.), Toledo, Ohio	Eastland	Absp.	15,000	Op.
Desdemona Gasoline Co. (Hirt & McDermott, Inc.), Fort Worth	Desdemona	Absp.	5,000	Op.
Dixie Gasoline Co., Cisco	Byrds	Absp.	3,000	Op.
Gulf Production Co., Fort Worth	Breckenridge (3)	Absp.	15,000	Op.
	Burkburnett (2)	Comp.	8,250	Op.
	Eastland	Absp.	3,000	Op.
	Electra	Comp.	2,000	Op.
Hanlon Gasoline Co., Tulsa, Okla.	Breckenridge (4)	Abps.	53,100	Op.
Hart Oil Corp., Fort Worth	Caddo	Absp.	500	Op.
Hirt & MacDermott Gasoline Co., Fort Worth	Desdemona	Absp.	5,000	Op.
	Sipe Springs	Absp.	....	Big.
Humble Oil & Refining Co., Houston	Breckenridge (4)	Absp.	30,000	Op.
	Burkburnett	Comp.	6,500	Op.
	Corsicana	Absp.	18,000	Op.
	Desdemona	Comp.	5,000	Op.
	Iowa Park	Comp.	2,000	Op.
	Vernon	Absp.	8,000	Op.
	Wortham	Absp.	10,000	Op.
Ilseng Petroleum Co., Fort Worth	Burkett	Comp.	800	S.D.
Invader Oil Corp., Muskogee, Okla.	Burkburnett	Comp.	6,000	Op.
Lone Star Gas Co., Dallas	Brazos	Absp.	7,500	Op.
	Desdemona	Comp.	2,000	Op.
	Gainesville	Absp.	10,000	Op.
	Gordon	Absp.	20,000	Op.
	Petrolia	Absp.	15,000	Op.
Magnolia Petroleum Co., Dallas	Archer	Comp.	....	Big.
	Breckenridge (3)	Both	10,500	Op.
	Burkburnett	Comp.	7,500	Op.
	Coleman	Both	300	Op.
	Desdemona	Both	5,000	Op.
	Desdemona	Comp.	28,500	Op.
	Electra	Comp.	4,820	Op.
	Mirando City	Comp.	250	Op.
	Olden (2)	Comp.	13,000	Op.
	Thrall	Comp.	70	Op.



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Arco metal coatings, for example, provide a permanently rust-resistive finish for oil tanks, tank cars, auto truck tanks, and pipe lines (either over or underground).

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THE ARCO COMPANY, CLEVELAND, OHIO
Paints - Varnishes - Enamels - Lacquers (42)

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An

Oil Saver Par-Excellence

The

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Made in 3 Styles

SAVES TIME by automatically latching into place and unlatching when rope socket or swab strikes it.

SAVES TROUBLE because the automatic unlatching feature prevents breakage often experienced in the set screws of old style savers.

SAVES TEMPERS for you don't get oil soaked tightening or loosening set screws.

The **Larkin-Rigby Oil Saver** is twenty years ahead of the old style saver as many users know. If YOU don't know—a single "trial" **Larkin-Rigby** will give you, we believe, an experience more satisfactory than you have ever had in using this type of equipment. Check up on this. Buy just a single **Larkin-Rigby** for trial and compare it with other oil savers.

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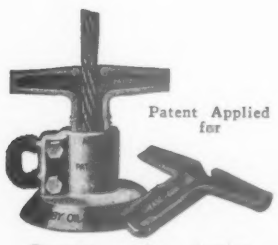
California Style



Patent Applied for

Common style, showing steel hollow top grease cup.

LARKIN & CO.

Butler, Pa., U. S. A.

Company and main offices—	Plant Location (Nearest Town)	Type	Capacity (Gals.)	Status
Majestic Gasoline Co. (Hirt & MacDermott, Inc.), Fort Worth	Desdemona	Absp.	3,000	Op.
Manhattan Gasoline Co., Tulsa, Okla.	Burkburnett	Comp.	10,000	Op.
McMan Oil & Gas Co., Tulsa, Okla.	Burkburnett	Comp.	12,500	Op.
	Desdemona	Absp.	3,000	Op.
	Desdemona	Comp.	4,000	Op.
Mid-Kansas Oil & Gas Co., Tulsa, Okla.	Caddo	Absp.	7,500	Op.
	Desdemona	Absp.	4,000	Op.
	Eliasville	Absp.	15,000	Op.
Mon-Tex Corp., Fort Worth	Sipe Springs	Both	35,000	Op.
National Products Co., Cleveland, Ohio	Breckenridge	Absp.	3,900	Op.
Noble Oil & Gas Co., Tulsa, Okla.	Burkburnett	Comp.	32,500	Op.
Ockland Gasoline Co., Tulsa, Okla.	Desdemona	Both	4,000	Op.
Orfic Gasoline Co. (Finco), Tulsa, Okla.	Desdemona	Comp.	6,500	Op.
Phillips Petroleum Co., Bartlesville, Okla.	Breckenridge (3)	Absp.	27,900	Op.
	Breckwalter	Absp.	2,000	Op.
	Eliasville (2)	Absp.	15,500	Op.
	Frankell (3)	Absp.	14,500	Op.
	Gorman	Absp.	5,600	Op.
	Megargel	Absp.	7,000	Op.
	Panhandle	Absp.	9,500	Op.
	Pioneer (2)	Absp.	23,000	Op.
	Sedwick	Absp.	24,000	Op.
	South Bend (3)	Absp.	15,400	Op.
Red River Oil Co. (McMan), Tulsa, Okla.	Electra	Comp.	2,800	Op.
Silurian Oil Co., St. Louis, Mo.	Burkburnett	Comp.	400	Op.
Sinclair Oil & Gas Co., Tulsa, Okla.	Burkburnett	Comp.	5,000	Op.
Skelly Oil Co., Tulsa, Okla.	Burkburnett	Comp.	9,000	Op.
	Clara	Comp.	2,500	Op.
	Coleman	Absp.	5,000	Op.
	Panhandle (2)	Absp.	....	Big.
Southern Gasoline Co., Ranger	Tiffin	Absp.	6,000	Op.
Smith-Hanlon, Tulsa, Okla.	Breckenridge	Absp.	10,000	Op.
Straits Gasoline Co., Breckenridge	Eastland	Absp.	2,500	Op.
Texas Gasoline Co. (Hirt & MacDermott, Inc.), Fort Worth	Desdemona	Absp.	5,000	Op.
Texas Pacific Coal & Oil Co., Thurber	Caddo	Absp.	10,000	Op.
	Mingus	Absp.	2,000	Op.
Texhoma Oil & Refining Co., Wichita Falls	Burkburnett	Comp.	6,000	Op.
	Electra (2)	Comp.	7,000	Op.
The Texas Company, Houston	Burkburnett	Comp.	22,000	Op.
	Electra	Comp.	14,000	Op.
	Olney	Comp.	9,000	Op.
	Parks (leased to Hanlon Gasoline Co.)			
Tidal Western Oil Corp., Tulsa, Okla.	Burkburnett	Absp.	15,000	Op.
Transcontinental Oil Co., Tulsa, Okla.	Caddo	Absp.	1,000	Op.
Waggoner Refining Co., Electra	Electra	Absp.	....	Big.
World Gasoline Co., Fort Worth	Desdemona	Comp.	1,600	Op.
Total			1,020,790	
WEST VIRGINIA				
American Oil Development Co., Pittsburgh, Pa.	Frew	Both	1,300	Op.
	Hebron	Comp.	150	Op.
	Wick	Comp.	150	Op.
Carnegie Natural Gas Co., Pittsburgh, Pa.	Church	Comp.	450	Op.
	Clay	Absp.	150	Op.
Casto Oil Co., St. Marys	St. Marys	Comp.	300	Op.
Chalmers Oil & Gas Co., Inc., Baltimore, Md.	Pennsboro	Comp.	55	Op.
Chemical Oil & Gas Co., Pittsburgh, Pa.	Big Ben	Absp.	800	Op.
Colonial Oil Co., Parkersburg	Lima	Comp.	100	Op.
Dinsmoore Companies, St. Marys	Pleasant Valley	Comp.	1,000	Op.
Falling Rock Cannel Coal Co., Charleston	Weir	Absp.	5,000	Op.
Federal Oil & Gas Co., Akron, Ohio	Burning Springs	Comp.	250	Op.
	Freeman's Creek	Comp.	100	Op.
Glenn, S. B., St. Marys	St. Marys	Absp.	100	Op.
Heck Oil Co., Spencer	Liverpool	Comp.	1,000	S.D.
Hennegan & Hanlon, Sistersville	Clay (3)	Comp.	200	Op.
	Grant (2)	Comp.	800	Op.
	Union	Comp.	50	Op.
Hope Const. & Ref. Co., Pittsburgh, Pa.	Bristol	Absp.	7,000	Op.
	Burnsville	Absp.	300	Op.
	Centerville	Absp.	3,500	Op.
	Ellenboro	Absp.	600	Op.
	Farmington	Absp.	16,000	Op.
	Foreman	Absp.	3,500	Op.
	Goff	Absp.	5,000	Op.
	Hastings	Absp.	45,000	Op.
	Littleton	Absp.	16,000	Op.
	Waverly	Absp.	5,000	Op.
	Wright	Absp.	10,000	Op.
Hudson Oil Co., Parkersburg	Cornwallis	Comp.	150	Op.
Imperial Oil & Gas Products Co., Pittsburgh	Harrisville	Both	2,000	Op.
Kanawha Oil Co., Pittsburgh, Pa.	Jacksonburg	Comp.	1,500	Op.
Manufacturers Light & Heat Co., Pittsburgh	Porters Falls	Absp.	5,000	S.D.
	Rosbys Rock	Absp.	2,000	Op.
	Sedalia	Absp.	2,000	S.D.
McKelvy Oil & Gas Co., Sistersville	Sistersville	Comp.	150	Op.
Monongahela West Penn Public Service Co., Fairmount	Elk (4)	Both	5,000	Op.
	Underwood	Absp.	3,000	Op.
New Martinsville Oil Co., Clarksburg	Greene	Comp.	125	Op.
New York Petroleum Co., Parkersburg	Belmont	Comp.	50	Op.
	Rutherford	Comp.	150	Op.
New Martinsville Oil Co., Clarksburg	Green	Comp.	125	Op.
Ohio Fuel Oil Co., Pittsburgh, Pa.	Smithfield	Comp.	300	Op.
	Union	Absp.	200	Op.
Oil & Gas Co., St. Marys	St. Marys	Comp.	600	Op.
Oakdale Oil & Gas Co., Oakdale, Pa.	Church	Absp.	800	Op.
Pittsburgh & West Va. Gas Co., Pittsburgh, Pa.	Hundred	Absp.	3,500	Op.
Pure Oil Co., Columbus, Ohio	Dawes	Both	6,000	Op.
Reno Oil Co., Sistersville	Tyler County (6)	Comp.	950	Op.
	Ritchie County (2)	Comp.	175	Op.
Reserve Gas Co., Pittsburgh, Pa.	Camden	Absp.	13,000	Op.
	Corrin	Absp.	6,000	Op.
	Kennedy	Absp.	20,000	Op.
	Wilsonburg	Absp.	6,000	Op.
Richwood Oil Co., Marietta, Ohio	Jacksonburg	Absp.	150	Op.
Salem Gasoline Co., Boston, Mass.	Salem	Absp.	1,800	Op.
Southern Oil Co., Pittsburgh, Pa.	Eureka	Comp.	25	Op.
	Macfarlan	Comp.	900	Op.
	Porters Falls	Comp.	150	Op.
	Sistersville	Comp.	300	Op.
South Penn Oil Co., Pittsburgh, Pa.	28 Plants	Comp.	25,000	Op.
	3 Plants	Absp.	5,000	Op.
Sterling Gasoline Corp., Charleston	Morgantown	Absp.	1,000	Op.
Sutton Brothers, Sistersville	Lincoln	Comp.	300	Op.
Tuel & Thoenen, Sistersville	Sistersville (3)	Comp.	600	Op.
Tyler Oil Co., Sistersville	Tyler County (3)	Comp.	250	Op.
Viking Gasoline Corp., Charleston	Morgantown	Absp.	1,000	Op.
Viking Oil Products Co., Charleston	Katy	Absp.	1,200	Op.
Viking Realty Co., Charleston	Martha	Absp.	800	Op.
Walker Oil Co., Parkersburg	Pentacre	Both	1,500	Op.
West Virginia Consolidated Oil Co., Parkersburg	Porters Falls	Comp.	100	Op.
Virginia Gasoline & Oil Co., Charleston	Clendenin	Comp.	800	Op.
	Charleston	Absp.	7,000	Op.
	Kermit	Absp.	1,400	Op.
	Mammoth	Absp.	1,600	Op.
	Ona	Absp.	10,000	Op.
	Porter	Comp.	500	Op.
	Sandyville	Absp.	9,000	Op.
	South Ruffner	Absp.	1,300	Op.
	Turner	Absp.	9,400	Op.
	Walgrove	Comp.	600	Op.
	Spencer	Absp.	8,000	Op.
Wiser Oil Co., Sistersville	Spencer	Comp.	300	Op.
Total			292,555	
WYOMING				
Carter Oil Co., Tulsa, Okla.	Casper	Absp.	18,000	Op.
Continental Oil Co., Denver, Colo.	Rock River	Absp.	4,000	Op.
Midwest Refining Co., Denver, Colo.	Elk Basin	Comp.	2,000	S.D.
	Salt Creek	Comp.	60,000	Op.
New York Oil Co., Casper	Teapot Dome	Comp.	1,500	Op.
Ohio Oil o., Findlay, Ohio	Grass Creek	Comp.	6,000	Op.
	Salt Creek	Absp.	10,000	Op.
Producers & Refiners Corp., Denver, Colo.	Casper	Absp.	7,000	Op.
	Riverton	Absp.	1,000	Op.
Total			109,500	

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A large producing company after carefully checking the comparative footage cost of many kinds of jars selected Spang Weldless Drilling Jars as the most economical and satisfactory jars for their operations.

That they have given satisfactory performance is best proven by the constant repeat orders and the fact that Spang Jars are now being used by this company not only on their American holdings—but in their foreign fields.

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Protect your Tool Joints with SPANG Thread Protectors. *Like all Spang products they guarantee absolute satisfaction and long, durable service.*

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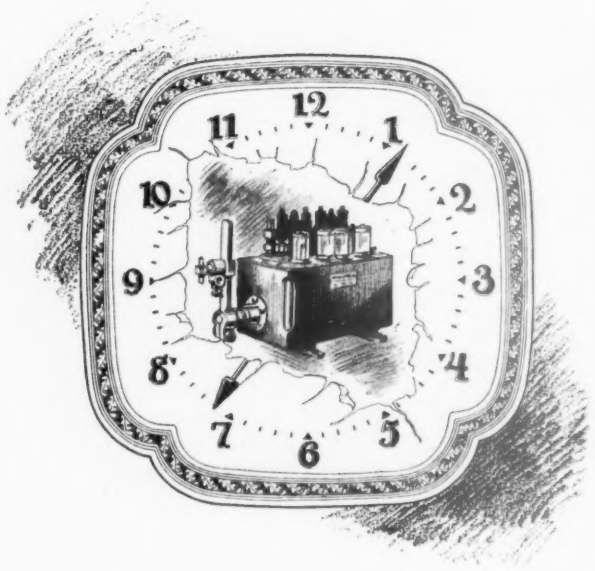

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LUBRICATOR DIVISION

STEEL TRADE ACTIVITY HOLDS UP; PIPE BUYERS DEMAND EARLY DELIVERY

By B. E. V. Luty

PITTSBURGH, Pa., May 31. — Steel trade activity is holding up very well. There was quite a distinct decrease in April and there has been a little further decrease in buying, on the whole, during the past month, but there has been little if any further decrease in actual production and shipments. There are variations from day to day and week to week so that very short range comparisons are not indicative. In general, it is probably true that production and shipments of steel were approximately as heavy in the second half of May as in the first half.

Appraisals of the state of the steel trade are largely a matter of viewpoint. Regularly in each of the past three years activity fell off more or less sharply during the second quarter, and this created a precedent by which most observers, whether consciously or unconsciously, judge present conditions. If trade falls off less than it did on the other occasions, then it is regarded as doing very well, and it is clear that at the present time it is falling off very little, taking it in the aggregate.

On Backlog Business

However, the mills are running partly on backlog business, which is going to play out in time, and when production is almost stationary at present, and the new buying considerably less than production there will be a gradual sagging off in production as time passes unless buying increases over the present rate, and of that there is of course no indication at the present time. Rail shipments are practically at capacity, but a tapering off will presumably begin in a couple of months or so. Tin plate shipments have already decreased a trifle. There has been no freight car buying to speak of for nearly three months, and shipments of freight car steel, which have been at nothing like a really high rate, will have to decrease eventually. In structural material the backlog is dwindling very slowly, as there is quite a fair volume of new business being booked from week to week.

The pipe trade, taken as a whole, presents a distinctly less promising outlook than it has hitherto, in the past few months. There has been a decided increase in merchant pipe demand, as compared with a month ago, but on the other hand it is now being admitted by the pipe mills, somewhat tardily, that there has been a distinct decrease in demand for oil country goods.

One estimate made in the trade is that the recent and present pace in the buying of oil country goods, counting both new orders and specifications against contracts, is about 25 per cent under the maximum rate of buying, which fell in the months of March.

Accounts vary as to whether there has been, thus far, any decrease in actual operation of pipe mills as a result of this decrease in oil country goods demand. In some quarters an estimate is made of an 80 per cent operation by the pipe mills, against an 85 per cent rate previously, but in other quarters it is maintained that the general average is still about 85 per cent. In any event it would be quite significant that the increase in merchant pipe trade of late has not produced any increase in the total operation.

Tubular Prices Sustained

Recently some of the pipe mills were making delivery promises of three to five weeks on some sizes of line pipe and well material. It has been found that this will not work, that buyers insist on early deliveries and have places to go where they can get them. As a result very little business is actually placed in casing, tubing and drill pipe except on expectation that shipment will be made within a week or two. In order to get business some mills have promised a little earlier shipment than they could really make, resulting in some friction here and there.

Tubular goods prices are fully sustained at regular rates. In other finished steel products there has been no change in the past week or two except a little further weakening in sheets, which are now selling more at 3.15 cents for black than at any other figure, and at 4.35 cents to 4.40 cents for galvanized. The old 4.60 cent price on galvanized has disappeared completely.

Pig iron and coke are extremely dull.

ACTIVITY IS GREATER IN TRINIDAD THAN IN YEARS

(Continued from Page 76)

asphalt is removed from the lake at the rate of over 600 tons per day; all of it being exported, the most of it going to the plant or refinery at Perth Amboy.

Asphalt Exported

The following table shows the tons of crude or (raw) and dried or (boiled) asphalt exported in the past 10 years.

Year—	Crude	Dried
1915	106,142	7,502
1916	100,273	6,471
1917	102,953	6,937
1918	49,875	6,924
1919	63,869	2,705
1920	36,782	76,915
1921	23,602	68,722
1922	39,390	100,041
1923	41,835	126,422
1924	33,531	135,866
1925	36,846	138,787

The export duty on crude asphalt is $1.20 per ton, and on dried $1.68 per ton.

All companies operating on the island are controlled by British capital except the Trinidad Lake Co., which is all owned by Americans, and most of the drilling is done with rotary tools, but there is some cable tool and slush pole tool drilling operations.

The English manufacturers are striving to break in on the oil field trade through the English companies, but there are only a few engines and boilers of European make to be seen.

Total production of Trinidad for 1925 was 4,386,507 bbls., of this 126,233,293 gallons of kerosene, gasoline, lubricating and fuel oil were exported, of a total value of $9,049,189.

The larger part of Trinidad's production is of 19 gravity oil, though very rich in gasoline.

The British United Oilfields, Ltd., which became discouraged and abandoned its holdings on the island of Barbados, a few years ago has returned, and put the small wells on the pump and is now drilling another test.

The Standard Oil Co. of Venezuela, the Trinidad Lake Co., Ltd., and the British Controlled Oilfields, Ltd., have been doing considerable development work in eastern Venezuela just west of Trinidad for three years. They have struck oil in small quantities in a number of places, but owing to the distance from the coast and the low gravity of the oil, it can not be produced on a paying basis. There is a total of 11 strings of tools running in this district at the present time.

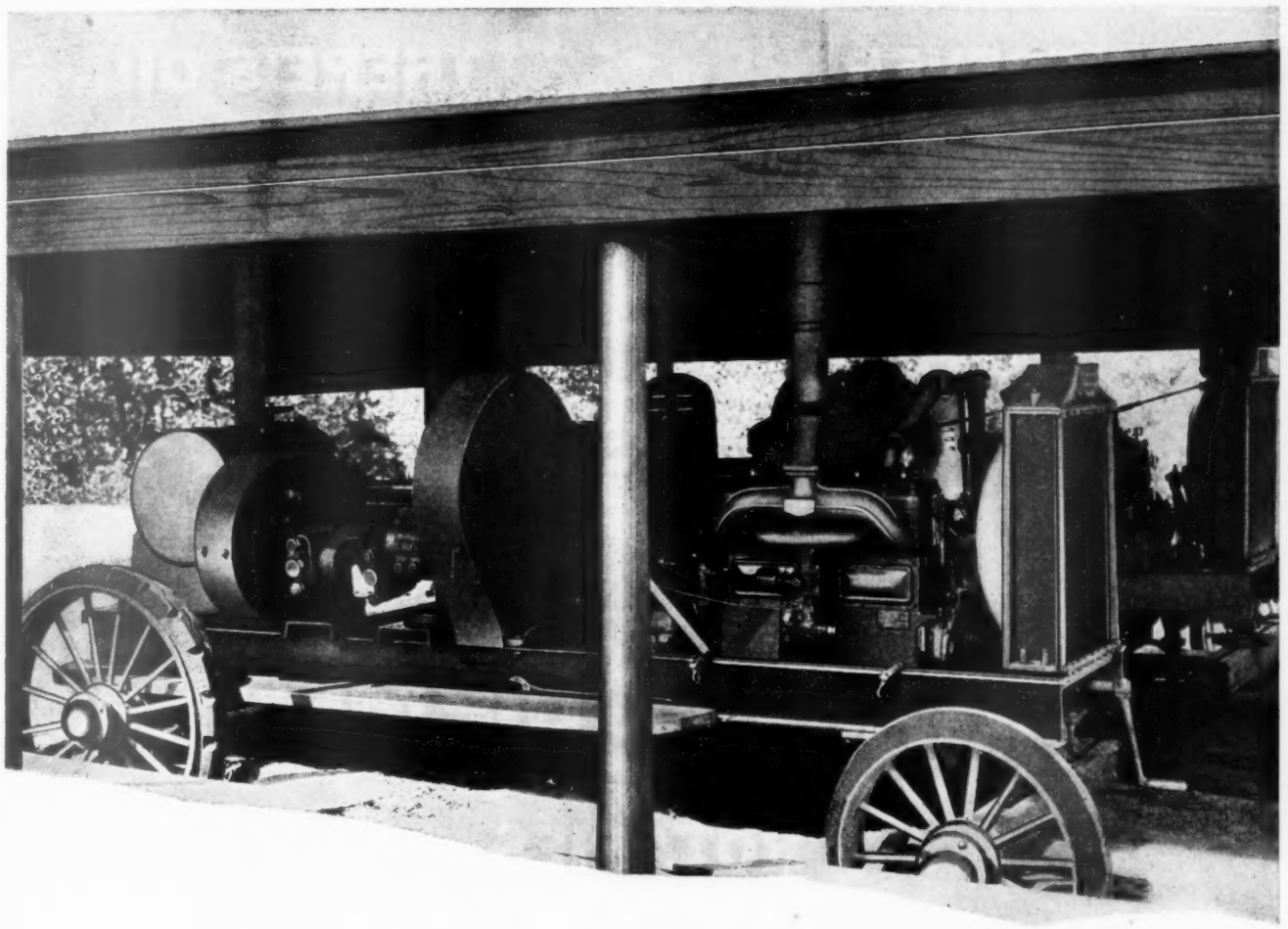
A group of New York capitalists is organizing an oil company and has acquired concessions in British Guiana, and is expected to begin operations soon.

STOCK CHANGES FOR APRIL

Pipeline and tank farm gross domestic crude oil stocks east of the Rocky Mountains decreased 2,467,000 bbls. in the month of April, according to returns compiled by the American Petroleum Institute from reports made to it by representative companies. The net change shown by the reporting companies accounts for the increases and decreases in general crude oil stocks, including crude oil in transit but not producers' stocks.

BRUIN, PA., PLANT FIRE

BUTLER, Pa., May 29.—Fire destroyed the gasoline plant and 5,000 bbls. of oil at the works of the Butler County Refining Co. at Bruin, near here. Damage was estimated at $75,000. Company officials said it would require 60 days to rebuild the damaged section.



Buda Pinch-Hits for Power Station

Because they are easily and quickly moved from place to place, Buda engines can be used with profit in situations where economical power is wanted at once before deciding upon a permanent installation.

The picture shows two Buda-equipped portable pumping units made by Wheatley Bros. of Kansas City, Mo., and owned by the Consolidated Pipe Line Co. of Tulsa, Okla. Each of these 4x8 inch duplex high power pumping units handles 140 barrels of oil per hour at 375 lbs. pressure and together they constitute a boosting or relay station on the pipe line.

Units of this type may be used for six months or a year while fixing the eventual power requirements of a new oil field. After serving such purpose they are readily disconnected and rolled to a new location.

In gas and oil field operations, Buda engines are used successfully on almost every kind of job calling for 20 to 87 rated horsepower. The service which follows them everywhere insures their unfailing reliability.

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Manufacturers of gasoline, natural gas and kerosene engines ranging in size from 20 to 87 horsepower

BUDA *The* ENGINE

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International Supply Company, Stroud, Garber and Wewoka, Okla.

EASTERN FIELDS

(Continued from Page 58)

the M. E. Fetty farm. It is a very light pumper.

Starting Gilmer County Tests

On Rock Camp run, DeKalb district, Gilmer County, C. W. McCall and others have the rig completed for a second test on the W. W. Wright farm, 800 feet southwest of the first test. On Tanners run, same district, A. E. Ellis has a rig up for a second test on the W. J. Fling farm. On the same stream, the Hope Construction & Refining Co. has the rig completed for a test on the Edward Reynold farm, 1,000 feet northwest of its No. 10 on the Drusella Hardman farm.

In Union district, Wood County, the South Penn Oil Co. has completed in the second Cow Run sand, No. 5 on the Grant heirs' farm, and good for 5 bbls. a day. In the same district, the White Sand Oil Co. has started to drill another test on the John Rost farm. In Walker district, the South Penn Oil Co. has the rig completed for No. 19 on the Susan Grant farm.

In McClelland district, Doddridge County, the Norr Bell Oil & Gas Co. has completed in the Big Injun sand a test on the M. Underwood farm. It is a light pumper. In the same district, J. H. Pence has a gasser in the Gordon sand at a test on the Smith farm.

Marion County

In Lincoln district, Marion County, the Owens Bottle & Machine Co. has a gasser in the fifth sand at a test on the William Freeland farm. In the same district, the Bell Oil & Gas Co.'s test on the Curtis Miller farm is a gasser in the gas sand.

In Center district, Gilmer County, the Hope Natural Gas Co. has a Maxon sand gasser at a test on the F. Sourbourne farm. In DeKalb district, the Pittsburgh & West Virginia Gas Co. has a gasser in the Big Injun sand at a test on the W. V. Miller farm. Godfrey L. Cabot's test on the W. H. Harless farm, in Smithfield district, Roane County, is a gasser in the Big Injun sand.

Berea Grit Producer

In Walker district, Wood County, the Congdon Oil Co. has a 15-bbl. pumper in the Berea grit at No. 10 on the Elgie Grant farm. In McKim district, Pleasants County, Howard Hall & Co. have a 3-bbl. pumper in the Big Injun sand at a test on the James E. Robinson farm. In the same district, Charles DeLong and others have a duster in all sands at a test on the Charles DeLong farm. It has been abandoned.

Gassers in Lincoln County

In Carroll district, Lincoln County, the Transylvania Petroleum Co. has a gasser in the Berea grit at a test on the Bird Maddox farm. In the same district, the Laurel Development Co.'s No. 4, on the A. F. Morris farm, is a gasser in the same formation. In Mannington district, Marion County, the Dunn Mar Oil & Gas Co.'s test on the W. O. Mayne farm is a light gasser in the Big Injun sand.

Lewis County

The Duncan Oil & Gas Co.'s test on the C. H. and E. Duncan farm, in Courthouse district, Lewis County, is a gasser in the Gantz sand. In Skin Creek district, the Mud Lick Oil & Gas Co. has a gasser in the same formation at a test on the Andrew Carothers farm. In Walton district, Roane County, the United Fuel Gas Co.'s test on the A. C. Cottrell farm is a gasser in the Big Injun sand.

Calhoun County

In Sherman district, Calhoun County, the Hope Natural Gas Co. has a gasser in the Big Injun sand at a test on the John Fogle farm. In Lee district, same county, the Ohio Fuel Oil Co.'s test on the G. W. Shafer farm is a gasser in the Big Injun sand.

Late Completions

At the close of the week of development work, the West Virginia fields had a number of wells completed. The most of them are light producers or gas wells.

In the Big Injun sand development in Henry district, Clay County, the South Penn Oil Co. completed No. 17, on the O. D. Stockly farm, good for 15 bbls. a day. The location is 400 feet northwest of No. 18 on the same farm. On Nutters Fork, West Union District, Doddridge County, the Clifton Oil & Gas Co. has a 5-bbl. pumper in the Big Injun sand at No. 13 on the Flora Freeman farm. In Clay district, Monongalia County, the Dunn Marr Oil & Gas Co. has a 4-bbl. pumper in the Bayard sand at a total depth of 3,289 feet, on the Varner heirs' farm.

Wood County

On Laurel Creek, Union district, Wood County, the South Penn Oil Co. has completed in the Berea grit No. 3 on the Daniel Wharton farm good for 4 bbls. a day. On Lick Fork, Grant district, Ritchie County, William T. Wyatt & Co. have completed No. 10 on the West Virginia tract, and have a 3-bbl. pumper in the Berea grit. On the same tract and in the district, Lafayette Wiles & Co. completed No. 21, the same kind of a pumper.

Boone County

In Sherman district, Boone County, the Pure Oil Co. has a duster at its test on the J. C. Warren farm. In the same district and county, the same company completed in the Berea grit a test on the P. C. Bone farm. It is a gasser good for 600,000 feet. The same company has completed No. 20 on the Lafollette, Robson & Prichard tract B, a light gasser in the Berea grit.

Kanawha County

On Little Dandy Creek, Elk district, Kanawha County, 500 feet west of the Columbian Carbon Co.'s No. 5 on the Vickers farm, the United Fuel Gas Co. has completed in the Big Injun sand a well on the C. Halstead farm good for 450,000 feet of gas. On Big Sandy, Big Sandy district, the same company has completed in the Big Injun sand a test on the Wilson Woods farm, good for 370,000 feet of gas.

On Meathouse Fork, Greenbrier district, Doddridge County, R. S. Monroe has a producer good for 20 bbls. a day in the Gordon stray sand at No. 4 on the Edith M. Farris farm.

Marion County Completions

In Lincoln district, Marion County, the Owens Bottle & Machine Co. has a gasser in the Big Injun sand at a test on the Curtis Freeland farm. In Paw-Paw district, the same company's test on the Lee Yost farm is dry in all sands. In the same district, the same company's test on the Lot Musgrave farm is dry in all sands. In Lincoln district, the Bell Oil & Gas Co.'s test on the Miller farm is a gasser in the gas sand.

On the waters of Poplar Fork, Scott district, Putnam County, Kirtley & Keller have completed in the salt sand a test on the H. H. Pine farm. It is a gasser good for 1,500,000 feet. On the waters of Mud River, Grant district, Cabell County, Lewis Sweetland & Co. have the rig completed and started to drill a test on the Robert Collins farm.

Light Pumper in Mingo County

On Breeden Creek, Harvey district, Mingo County, A. B. McGrew, Jr. has drilled No. 9 on the Henry Closterman estate, 50 feet deeper into the Maxon sand. It is good for 4 bbls. a day and has a gas pressure good for 1,500,000 feet.

On Big Fork of Little Sandy Creek, Elk district, Kanawha County, the United Fuel Gas Co. has completed in the salt sand a test on the A. B. Pauley farm good for 4 bbls. a day. The Ohio Fuel Oil Co. holds the oil right on this farm and the well has been turned over and will be operated by this company.

Trainer Brothers & Ash have completed in the Gordon sand a small gasser on the Dare Bates farm, in McClelland district, Doddridge County. In Grant district, Harrison County, the Hope Construction & Refining Co. has a fair gasser in the Speechley sand at No. 4 on the Marshall Martin farm. Seven miles south of Clarksburg, Union district, Harrison County, the Reserve Gas Co. has started to drill No. 3 on the R. C. McReynolds farm.

Starting New Work

On Dry Ridge, Grant district, Ritchie County, the Astron Oil Co. has moved in a drilling machine to a second location on the Herman Sternburg Realty Co.'s property. On Holley run, same district,

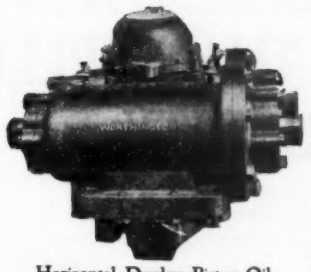
MEASURE
your boiler feed and fuel oil
ACCURATELY

Disk Type Boiler-feed Meter

THERE is a Worthington meter for every boiler-feed and fuel-oil measuring service—hot or cold, high or low pressure.

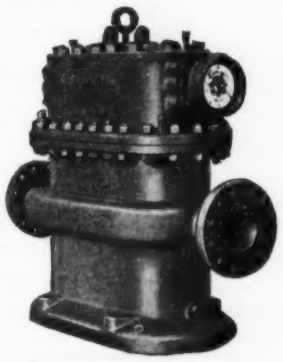
The performance of the vertical piston-displacement Worthington oil meter was very favorably commented upon in a recent National Electric Light Association Report, in which by actual test three of these meters, after having measured 80,000,000 gallons of fuel oil at 130 lb. pressure, showed an accuracy of better than 99½ per cent.

Turbine Boiler-feed Meter


Horizontal Duplex Piston Oil and Tar Meter

Performance of this kind speaks for itself.

Let us know your water and oil measuring problems and we will be glad to make recommendations.


Vertical Piston-displacement Oil Meter for high pressures and high temperatures

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3. Seams reinforced with strong steel strips and channels.
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5. Best valve and thief-hatch equipment obtainable.
6. Vapor-tightness throughout.

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Distributors at All Principal Petroleum Points

Sizes: 12 to 3,000 Barrels

Packed in Steel-Bound Crates for Export

"Buck" Type Vacuum Pressure Valves and Vacuum Breakers Furnished

MADE OF KEYSTONE COPPER STEEL — MALONEY PATENTED BOLTED COPPER-STEEL TANKS — MADE OF KEYSTONE COPPER STEEL

MALONEY

ALONE!

Lafayette Wiles & Co. are starting No. 22 on the West Virginia tract. In the same district and same tract, William Wyatt & Co. are starting No. 11. On McFarlan Creek, same district, the Hardwick Farm Oil Co. has the rig completed for a second test on the Charles Hardwick farm. On the north fork of Hughes River, Loomis and others have the rig completed for a test on the Mullenax Brothers' farm. On Laurel Creek, Union district, Wood County, the South Penn Oil Co. has the rig completed for No. 13 on the Elvira Richardson farm. On the headwaters of Worthington Creek, same district, the Penacle Oil & Gas Co. is moving a drilling machine to the location on the A. F. Stagg farm.

Southeastern Ohio

The deep sand territory in southeastern Ohio is again furnishing an occasional good producer. Licking and Holmes Counties are completing more than any other.

In Section 17, Prairie Township, Holmes County, the Pure Oil Co. completed No. 3 on the Carnot Miller farm. The well produced 135 bbls. the first 24 hours after shot in the Clinton sand. This well was formerly drilled into the Big Lime formation and tested, proving a failure, was then drilled to the lower sand.

In Section 10, Perry Township, Licking County, the Hope Construction & Refining Co. has completed in the Clinton sand No. 3 on the Frank Phillips farm. It produced 105 bbls. the first 24 hours after shot.

Shallow Sand Completions

In Lot 24, Newton Township, Licking County, the Ohio Fuel Supply Co. has completed a test on the Ellen E. Forry farm and good for 10 bbls. a day in the Berea grit. In the southeast quarter of Section 6, same township, Harry Farmer and others have completed in the same formation No. 3 on the Orie Pound, and after a shot is good for 14 bbls. a day.

In the southwest quarter of Section 14, Washington Township, Hocking County, the Gordon Oil Co. completed in the Clinton sand No. 4 on the George Anthony farm and showing very little oil. The location is 600 feet south of No. 2, a good producer. In Lot 15, Hanover Township, Licking County, the Edward H. Everett Co. has started to drill No. 4 on the U. G. Porter farm. In Section 4, Green Township, Hocking County, the Red Top Oil & Gas Co. has started to drill No. 8 on the Chule heirs' farm. In Washington Township, Monroe County, the Bentz Oil Co. has started to drill a second test on the James K. Howell farm.

In Section 21, Union Township, Knox County, the Pure Oil Co. completed and shot in the Clinton sand a second test on the W. D. Heaton farm. The well produced 80 bbls. the ensuing 24 hours. The location is 800 feet east of the first test on the same farm. In Section 13, Brown Township, the East Ohio Producing & Refining Co. completed in the Berea grit No. 4 on the George A. Richert farm. It is not good for more than 2 bbls. a day.

Light Pumpers in Perry County

In the old Corning Field, Section 33, Pleasant Township, Perry County, the Allegheny Oil Co.'s No. 12, on the Elizabeth Berrisford farm, is good for 10 bbls. a day in the Berea grit. In the same field, Section 14, Monroe Township, Marshall & Marshall have completed No. 30 on the Donahue farm. It is a near duster in the Berea grit. In Bearfield Township, John Fouts has completed No. 9, on the Michael Lemity farm, and good for 7 bbls. a day in the Berea grit.

Licking County

In the southeast quarter of Lot 6, Newton Township, Licking County, the Ohio Fuel Supply Co. has completed in the Berea grit No. 4, on the Orpha Hunsberger farm, good for 5 bbls. a day. In the southwest quarter of Section 21, Jackson Township, Knox County, the Arkansas Fuel Oil Co. has started to drill No. 16 on the L. V. Dugan farm.

The shallow sand territory in southeastern Ohio has a fair producer. In the southwest quarter of Section 28, York Township, Morgan County, the Sun Oil Co.'s No. 18, on the C. E. Swytzer farm has been completed and shot in the Berea grit. It produced 40 bbls. the first 24 hours. In Lot 22, Newton Township, Licking County, L. A. Petton & Co. have a 4-bbl. pumper in the same formation at No. 3 on the Smith-McCormick farm. In Section 15, Killbuck Township, Holmes County, the Ohio Fuel Gas Co.'s test on the M. L. Pyers farm is showing for a light gasser in the Clinton sand.

In the shallow sand territory in the southeast quarter of Section 28, York Township, Morgan County, the Pure Oil Co. completed and shot in the Berea grit No. 10 on the William Eppley farm and is good for 20 bbls. a day. In the southeast quarter of Falls Gore Township, Hocking County, the Griffin Producing Co.'s No. 6 on the Dora Williams farm is a light gasser in the Berea grit.

Guernsey County Gassers

In Section 23, Adams Township, Guernsey County, the Ohio Oil Co. has completed in the Niagara lime a test on the Finley C. Kerth farm. It is a gasser good for 2,500,000 feet. In Section 18, same township, the same company has completed in the same formation a test on the Alice B. Mehaffey farm and good for 877,000 feet.

In the southern end of Section 24, Grandview township, Washington County, Samuel Boyles has completed in the Keener sand No. 6 on the M. E. and F. B. Collins farm, not good for more than 2 bbls. a day. In the northeast quarter of Section 1, Cross Creek Township, Jefferson County, George Talbot and others have completed in the Berea grit a second test on the Schneider heirs' farm, a very light pumper.

In the northeast quarter of Section 22, Fallsbury Township, Licking County, the Leonard Oil & Gas Co. completed No. 4 on the Myers & Co. farm, good for 10 bbls. a day in the Berea grit. In Lot 30, Athens Township, Athens County, Gross and others have completed in the same formation a test on the Athens State Hospital property, good for 3 bbls. a day. This location is in the Fisher Pool. On Tract 16, Lot 2, Chatham Township, Medina County, Harry Dempsey has a duster at a test on the Edward Goodyear farm.

Starting Tests

In Section 6, Hopewell Township, Licking County, the Pure Oil Co. has spudded in a test on the Brown heirs' farm. In Section 6, Hopewell Township, Muskingum County, M. F. Whitehill is drilling a second test on the Boyer farm. The Planet Oil Co. is rigging up at No. 5 W. H. Weakley. In Section 14, Bowling Green Township, Licking County, the Midland Oil Co. has started to drill a deep test on the Edward Hupp farm. In the same township, the Flint Ridge Oil & Gas Co. has started to drill No. 6 on the J. E. Armstrong farm.

Southwest Pennsylvania

In Morris Township, Greene County, the Natural Gas Co. of West Virginia has a gasser in the Gordon sand good for 4,500,000 feet at No. 4 on the Lewis Powers farm. In the same township, the Consumers Fuel Co. has a gasser in the same formation at a test on the Sarah Thompson farm good for 1,500,000 feet.

In Gilmore Township, Greene County, Bell and others have completed in the Bayard sand a test on the J. P. Hagen farm. It is a dry hole at a total depth of 3,500 feet.

The Philadelphia Gas Co.'s test on the Johnson Rose farm, in Perry Township, Greene County, is dry in all sands and abandoned. In Greene Township, the same company has completed in the Big Injun sand a test on the S. C. Minor farm. It is a fair gasser.

KENTUCKY-TENNESSEE

(Continued from Page 58)

Kelley lease, 5 bbls. No. 8 Herbert Skaggs farm and No. 30 Sanford Lyons farm, are drilling. In District 22, this company is drilling No. 15 C. E. Fraley and No. 9 R. N. Sparks farm. In District 32, same company's No. 40 P. P. Holbrook farm, is estimated at 10 bbls. with Nos. 41 and 42 drilling as well as No. 42 on the J. J. Gambill farm, and

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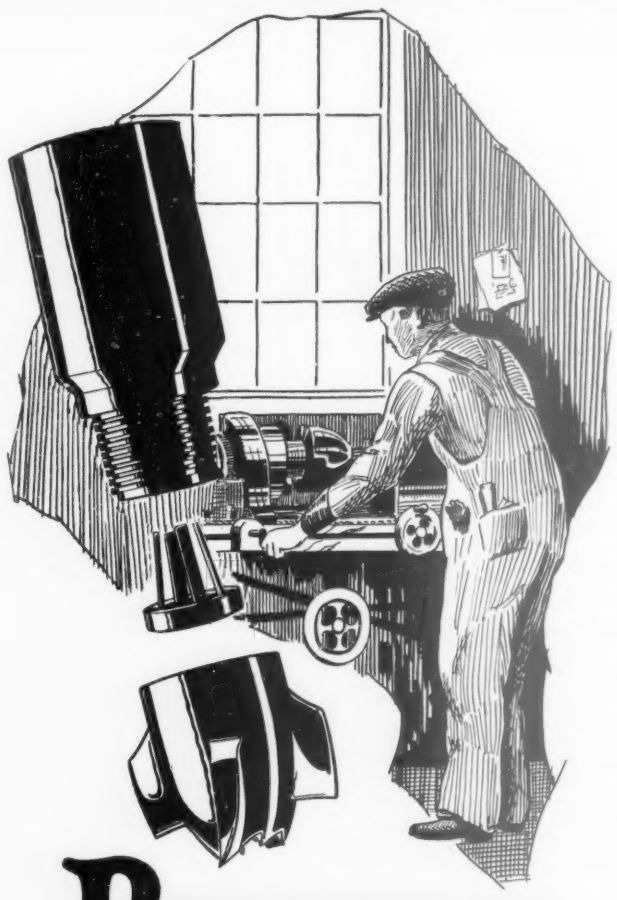

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No. 18 on the George Evans farm, District 33. The Reno Oil Co. is drilling a second well on the Esta Walters farm, in District 32.

The Elkhorn Coal Corp. and Model Oil Co.'s No. 3 on the Jess Adams No. 2 farm, District 31, of Johnson-Magoffin Counties, is estimated at 15 bbls. from the Weir sand, and drilling No. 2 John M. Adams farm. Bedrock Petroleum Co. is drilling No. 22 J. H. Arnett and the Short Fork Oil Co. is doing the same at its No. 6 H. H. May farm, same area. In District 29, same counties, R. G. Gillespie's No. 1, on the Yearns Hale farm, is reported at 10 bbls. The Hope Construction & Refining Co. has a 4-bbl. pumper in No. 9 Paris Long farm, and Hudson & Collins' No. 9 Oscar Wheeler farm, is a 3-bbl. pumper, while the Cumberalnd Petroleum Co. is drilling No. 7 on the A. A. Almy 76 acres, same division. In District 25, the Atlantic Oil & Refining Co. is drilling No. 20 on the Gordon Blanton farm.

Wayne County

E. M. Taybe and others are drilling a second test on the Malissa Fairchilds farm, District 13, in Wayne County, and W. R. Souther is doing likewise with a test on the Nancy L. Jones heirs' farm.

In District 2, Bell, Bell and others' No. 3 on the Coffey heirs' farm, is estimated around 1 bbl. In District, same county, the Beaver Petroleum Co.'s No. 4 on the Kinnie-Waddle-Gibson farm, is estimated at 3 bbls.

Estill County

The old Irvine Field of Estill County is showing a slight improvement and it is reported that quite an extensive drilling campaign will prevail in the old producing areas while some wells will reach out in advance of present production in hopes of finding more of the rich shallow territory.

In District 7, of Estill County, C. B. Howell, trustee, drilled in a dry hole in No. 3 on the C. B. Howell farm. C. O. Amsler and others met with the same fate at their test on the Jesse Willetts. The Mountain Springs Oil Co. struck a 2-bbl. pumper at No. 13 on the John Bill Rogers lease. R. Denton and others are drilling No. 11 D. N. Witt farm.

In District 8 the Superior Oil Corp.'s No. 7 on the Simp Horn lease, is said to be good for 8 bbls. while the Reno Oil Co.'s No. 5 S. M. Maple, is a 5-bbl. pumper.

Other Developments

In District 16, of the Lee-Owsley Counties, the Superior Oil Corp. drilled in a 3-bbl. pumper at No. 90 on the Hall-Burke lease. In District 18, the Ohio Oil Co. is drilling No. 82 on the Flahaven Land Co. lease. In District 35 C. M. Purdy is drilling No. 2 on the McGuire lease.

In District 21, Beaver Creek Field of Floyd-Knott Counties, the Midas Oil Co. is drilling No. 4 T. G. Martin farm, and the Hope Construction & Refining Co. is drilling No. 1 Joe Hall lease.

In District 30 of the Ophir Field, of Morgan County, Oliver Jenkins' test on the Lee Owens lease, it rated at 5 bbls. R. G. Gillespie's No. 19 on the Sam Blanton 125 acres, is also a 5-bbl. pumper and the Willson Oil Co. landed a 5-bbl. pumper in No. 3 Kelley Owens farm. In District 6, same county, W. B. Sandifer, trustee, is drilling a test on the Lenox Sawmill Co.'s land and the Pipping Rock Oil Co. is putting down a test on the T. J. Alam lease.

In District 15, of Powell County, W. O. Dunham's No. 4 John A. Rogers lease, is good for a couple of barrels.

Western Division

There is one thing that the western division of Kentucky can boast of and that is its famous shallow sands, supposed to be one of the best known to the oil trade. Allen County has possibly led in the greatest productive shallow sand area and has been producing for quite a number of years and still showing an occasional good producer at around 250 to 400 feet. Cumberland County is another of the shallow sand areas and some wonderful strikes are made and usually they produce a lot of crude until they get down to the normal average and remain there for an indefinite period. Some wells of the shallow kind drilled as long as 10 years ago, are still on the pump and doing their mite. The same conditions prevail in Barren, Cumberland, Adair, Monroe, Warren and parts of the Owensboro district.

Cumberland-Monroe-Adair

Some of the oil sands of Cumberland County are puzzles to the average operator and when you think the well that showed so good is gone, it returns again. One of the most interesting was the Hardly Able Oil Co.'s test on the Carley Scott lease, in the Kettle Creek Field, which after flowing 180 bbls. in six hours, was put on the pump and filled a 250-bbl. tank and quit pumping.. Then it was supposed that the well had done its all, but such was not the case. Several barrels of water was poured into the hole and allowed to stand two days, when pumping started again and at the last report the well was doing 7 bbls. an hour and bids fair to be a remarkable find. In the same field, the Two Creeks Oil Co.'s No. 1 on the W. T. Blythe farm, proved a duster at 765 feet. The Young Oil Co.'s second test on the J. Pondexter farm, was also a duster at a depth of 450 feet. On Lower Kettle Creek, McClintock and others' test on the Dave King farm, was completed at a depth of 780 feet and dry.

W. S. Raydure and Son's No. 5 on the M. E. Koop farm, in the Sulphur Creek district, was drilled far below the Pencil Cave, to a total depth of 837 feet where it was put on the pump and is doing at the rate of 8 bbls. an hour. Hook & McComas' second well on the J. B. Riddle farm is showing all the earmarks of a producer, as it is now cleaning out preparatory to putting it on the pump. The Southern Producing Co. is nearing pay sand at No. 10 A. A. Huddleston lease.

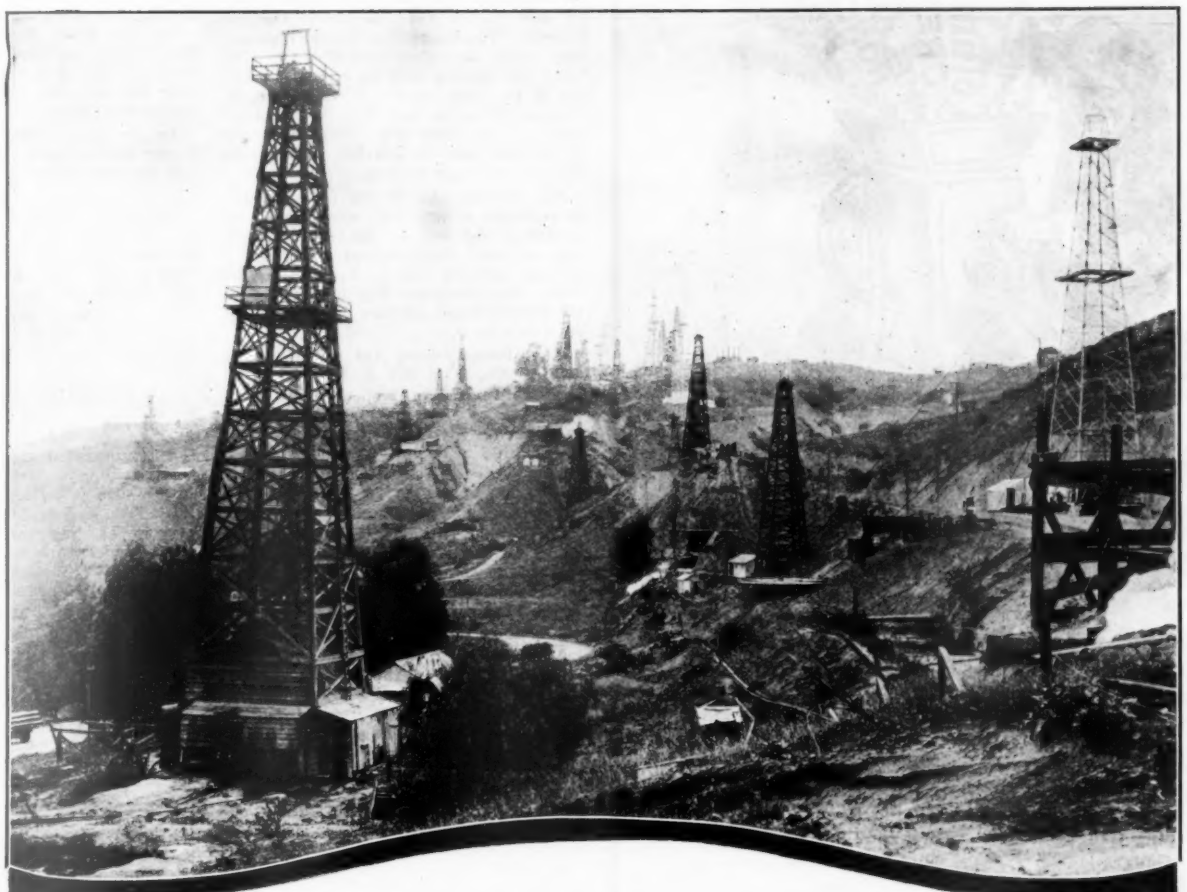
In the Crocus Creek district, the well drilled on the Barger farm went below the second Sunnybrook sand but was dry at a total depth of 585 feet. Baird & Hickman's No. 4 on the J. H. Morgan, is about ready for completion, while the drill has started at their No. 1 on the Harden Hadley farm. Phillippi and and others are shut down at a test on the Patterson farm, on Harrods Creek, being an offset to No. 2 Grider farm, and waiting for orders from headquarters. The rig of the Louisiana Oil & Lumber Co. announced a rig up last week, has not been put up as yet, on the Sharp farm, in the New Hopewell Pool.

The Martinsville Oil & Gas Co.'s test on the H. Flint farm, at Salt Lick Bend in White's Bottom, is showing for a nice producer from the Anderson sand at a depth of 286 feet. It will be put on the pump as soon as material arrives, otherwise its real value is not known. The Elbow Oil Co.'s test on the H. Cloyd farm on Judio Creek in the same part of the county, should be one of the early completions for at last report the drill had reached a depth of 280 feet. Crawford & Webster are drilling a test on the Hiram Jackman lease, in the north end of the Hopwell Field, across the Cumberland County line in Adair County.

In the Lower Kettle Creek area, across the state line in Clay County, Tennessee, the test of Comestock and Findlay on the Riley Kerr lease, is reported at 460 feet and should soon reach the producing sand, if there is any to reach, it being shallow territory.

Owensboro District

There are close to 20 strings running in the Owensboro District, composed of Hancock, Ohio and Daviess Counties, and several completions were expected for the week, although but two made the grade up to the close of the week. The Leeper Oil Co.'s No. 8 on the Lon Helm, located 400 feet northwest of No. 7 and in the Collins Pool, that made such a fine showing with better than 180 bbls. a day for a couple of days, should drop to 40 bbls. and reamin there for some little time. The other completion is a dry hole found by the Pennsylvania-Indiana Oil Syndicate in No. 6 on the R. B. Powers 100 acres, and 400 feet east of No. 2. No oil was found in the Jett or Barlow sands



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and a heavy dose of salt water reported at a total depth of 1,170 feet and will be abandoned as a duster.

The Leeper Oil Co.'s test on the Probst 37 acres, southwest of No. 1 on the Monroe Collier farm is in the Jett sand, and shows for at least a 25-bbl. flush producer after given a shot. This is in the Collier Pool. This well is in Ohio County just across the line from Daviess County. The Leeper Oil Co., in conjunction with the Wah-Shah-She Oil Co., has a fair looking well, at least the showing is for such, in No. 3 on the R. B. Powers 40 acres and 300 feet east of No. 1 on the same farm. Oil was found in the Jett sand at 549 feet and will be put on the pump at once.

The Panther Creek Oil Co. was due to complete a well but was delayed by a cave-in and will be brought in later. Johnson and Engle moved a rig for a wildcat well on the L. L. Troyden 70 acres, approximately 2½ miles west of the Rex-Pyramid venture on the Sinnett or Smith lease.

The Penn-Indiana Oil Syndicate is drilling No. 3 on the J. L. Phillips 82 acres as well as No. 2 on the C. W. Kelley 160 acres, 400 feet north of No. 1, same farm. Bert Thompson and others are drilling a wildcat on the C. Roach 130 acres, the location being in the southeast corner of the north half of the farm and west of the Midkiff producers.

The White Plains Oil & Gas Co.'s No. 1 on the W. M. Coleman 125 acres was dry in the Jett sand and drilling to the Barlow sand.

The Owensboro Messenger says: "Marvin Jordan, who has been active in the local oil field for several years past, has secured a lease on the oil rights along the right of way of a private roadway bought by C. W. Wells from Mrs. Nannie Brown a few years ago. This roadway is in the territory wherein the Guenther-Gant lease and the Joe Bob Ellis lease have produced several of the best wells in the field. Mr. Jordan has secured the services of C. E. Daugherty to drill a number of wells along this narrow strip. He calls the new company the Greasy Lane Oil Co."

Warren County

Only one completion was reported from the Bowling Green Field of Warren County, being Onsel Brothers and others' No. 6 on the C. G. Davenport farm, which was a flush producer around 75 bbls. and will make a 25-bbl. pumper in the deep sand at a depth of 1,161 feet.

The Times-Journal, of Bowling Green, Ky., comments in its editorial column as follows: "The local oil operators are very jubilant and they have a right to be as there has been a substantial advance in price in the grades of oil found in this county. The increase is given as 25 cents on the barrel which means a considerable amount in a month's total, it being estimated that this will be an increase of something like $10,000 on the average amount of oil produced in Warren County.

"The oil industry for the past several years has gone along without much bluster and yet there have been a great many producers bringing into our county something like $50,000 to $75,000 per month. There appears to be a revival in the development and more wells are being reported than has been the case for sometime past. With such a market increase in the price of oil there will likely be more real oil men coming to our field and our county will no doubt witness much activity in the oil industry in the near future."

Other Developments

In the Glasgow Field of Barren County, in the Jimtown Road district, Lew J. Emery, Jr., & Sons Co.'s No. 1 on the Park Pitcock lease, is reported around 7 bbls. at 550 feet.

In the Lecta Pool, 3 miles east of Glasgow, the Esslinger Oil Co.'s No. 1 on the Alice Clark farm, has been completed at a depth of 562 feet and dry. This company is drilling No. 5 C. B. Jones farm, upon which the discovery well of the pool was found. Combs and others are around 250 to 300 feet at No. 1 Grady farm.

In the Gorby Pool, Lew J. Emery, Jr., & Sons Co. is reported to be drilling at 182 feet below the Black shale. Hope Construction & Refining Co. drilling No. 3 Dearing lease at around 300 feet. J. W. Porter is drilling No. 17 McGlocklin farm and the Hiland Oil & Gas Co. is drilling No. 17 Casady farm.

In the Knob Road district, Ziegler Brothers are drilling No. 2 Boyd Brothers farm and No. 3 on the C. D. Boyd farm. Star Oil and Gas Co. is drilling No. 3 Richardson farm.

In the Emery-Moore Pool, Fred C. Moore struck black shale at from 249 to 302 feet and at last report was down 400 feet.

In the Scottsville Field of Allen County, the Citizens Oil Co.'s No. 16 I. H. Rickman farm, is estimated good for 2 bbls. at 417 feet. Lee Moore is drilling No. 6 on his fee farm.

Reagle, Clark and others are down close around 600 feet at a test on the L. Wilkerson farm, in Simpson County.

MICHIGAN FIELDS

(Continued from Page 60)

Corp. announced that they expected to start drilling a well here in the near future. Its probable location, they said, is on the Ernest Fisher farm, Sections 10 and 11, Saginaw Township, on the Bay Road, about a quarter of a mile south of the Shattuck Road. The farm is a short distance northwest of existing wells. E. L. Keller, general superintendent of the oil division of the company and S. P. Alcorn, superintendent of the company, with headquarters in Columbus, Ohio, were here looking over the field and conferring with Harold P. Welch, a representative of the company's leasing department, who has been here some time. Mr. Keller declared that indications here seem favorable in many respects. 'We have a considerable amount of acreage here and expect to drill a well in the near future,' he said. 'The outlook in the Saginaw Field seems promising, for when so many wells are drilled over so large a territory with no dry holes, the prospects seem good.'

"The Ohio Fuel Corp. has an authorized capitalization of $125,000,000, with $96,000,000 of its stock outstanding. Its general offices are in Pittsburgh, Pa. It controls several subsidiary companies, among them the Manufacturers Heat & Light Co., the Ohio Fuel Supply Co., the Union Natural Gas Corp., the Natural Gas Co. of West Virginia, the Ohio Fuel Oil Co., and the Pennsylvania Fuel Supply Co."

Getting the Oil Fever

Since Saginaw has become an oil headquarters, other towns and cities have the fever. The latest is far to the north of Saginaw Bay, in Alcona County, with Harrisville, the county seat, as the jumping place. Harrisville is on Lake Huron, south of the Life Saving Station at Sturgeon Point and between Saginaw Bay and Thunder Bay, two of the roughest bodies of water in the chain of lakes. Word from Harrisville, is: "Oil prospecting, which has been the center of keen interest in the Saginaw Valley, is about to be extended as far north as Harrisville, it is understood. Two Detroit men have secured a number of leases on lands in Alcona County, near Harrisville, and have given those from whom they leased land assurances that they plan to drill a test well this summer."

Late Leases Recorded

Bliss Petroleum Co., 80 acres in Ingersoll Township, Midland County.

Fuel Oil Corp. of Hamtramck, 80 acres in Kochville Township, Saginaw County.

Bliss Petroleum Co., 4 acres in Kochville Township.

Arthur H. Horton, trustee, six oil leases, five leases in St. Charles Township, on 220 acres, one lease in Swan Creek Township of 80 acres.

Elwart G. Thompson of Payne, Ohio, 20 acres in the City of Saginaw, in the vicinity of the present development. Drilling to start in 90 days from date of lease.

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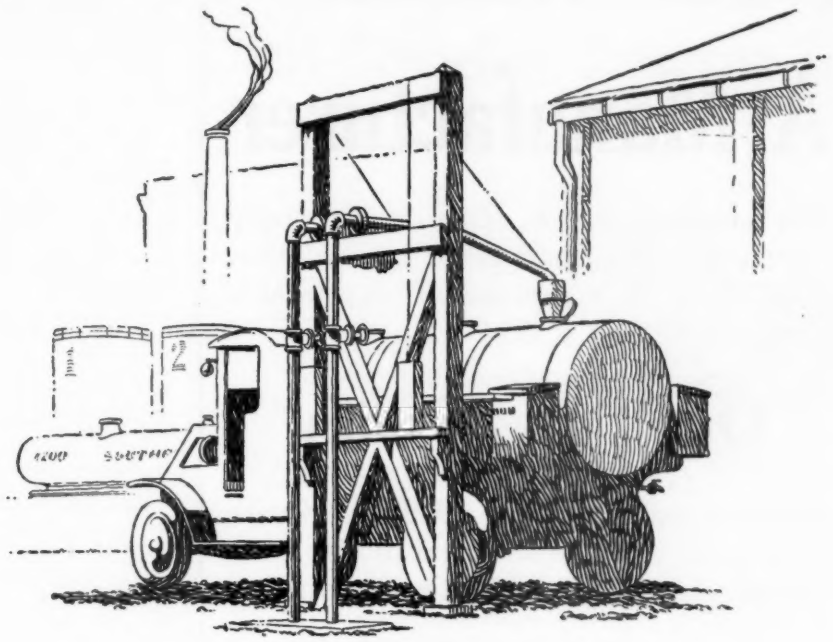

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CENTRAL WEST

(Continued from Page 60)

on the L. Huffman, Section 20. The same company abandoned Nos. 1 and 2 on the J. Gephart, Section 2, Jackson Township, Sandusky County. In Cynthian Township, Shelby County, the Fort Laramie Oil & Gas Co. pulled No. 4 Frank Danzig, Section 16.

Indiana Field

In the old Trenton Rock area of the Indiana Field, new work is springing up in numerous areas and parts of Adams County are already getting a good play and other areas will follow now that oil has taken an advance. In Bear Creek Township, Jay County, M. T. Smith and others, formerly reported as H. L. Ogle and others, have drilled in No. 3 on the Irwin Campbell farm, Section 15, and have a 20-bbl. pumper. The Central West Oil & Gas Co. is drilling a test on the L. D. Lowe, Section 10, same township. In Penn Township, same county, the Amber Oil Producing Co.'s No. 11 S. E. Davis, Section 21, was a duster.

In Blue Creek Township, Adams County, Schulte, Haney and others' No. 3 on the G. Runyon, Section 16, is rated at 5 bbls., with No. 4 starting. George S. Lacknett, well known operator and contractor, is drilling a test on the Tinkhenn 80 acres, Section 34, and W. King, of Columbus, Ohio, has a rig in for No. 4 on the C. Jones, Section 30,. J. H. Harmon and others of Mansfield, Ohio, are drilling No. 7 on the Mary J. Niblick, Section 5. David Abromson has abandoned No. 2 J. Kinney and No. 3 C. Duer, both in Section 22, same township.

The March Petroleum Co. is drilling No. 28 on the Calvin Perdue, Section 29, Salamonie Township, Huntington County, and the first well to be started in that county for many months.

In southwestern Indiana, in Logan Township, Pike County, Andrews & Burden's second test, 624 feet from the south line and 168 feet from the east line of the Sarah Shoaf heirs, in the southeast quarter of Section 14, pumped 25 bbls. from a total depth of 1,394 feet, or 19 feet in the sand. Claude Chandler and others' test, 136 feet from the north line and 600 feet from the east line of the Manda Williams, in the northeast quarter of Section 14, is reported dry at 1,445 feet. The United Petroleum Co.'s No. 3, 660 feet from the south line and 225 feet from the east line of the W. Crecelius, Section 22, was also dry at 1,045 feet. In Clay Township, same county, the Murphy Oil Co. is drilling No. 4 on the Stewart Brothers farm, Section 13, and the Bement Oil Co. is drilling No. 3 Claud Loveless, same section. In Madison Township, the Bradford Supply & Ploft abandoned No. 1 S. A. P. Barker, and No. 2 on the Monroe Loveless farm, both in Section 6.

Bellman and others are drilling a test on the C. E. Gilbert farm, Section 16, Hamilton Township, Sullivan County.

Central Ohio Field

While only one completion is reported from the Central Ohio area for the past few days, it does not mean that work is letting up; instead there is a revival, but it happened to be a period when the drill had not reached the proper level to get either oil or gas.

In Chatham Township, Medina County, Harry Dempsey drilled a well 260 feet from the south line and 3,485 feet from the east line of the Edward Goodyear farm, Lot 5, Tract 15, and found nothing worth while at a depth of 458 feet.

The Ohio Fuel Supply Co. made a location for a wildcat in the southeast corner of the Cliff McFarland 120 acres, Section 3, Linton Township, Coshocton County.

In Wheeling Township, Guernsey County, the Ohio Fuel Gas Co. will start a test on the Cana Forney 70 acres, Section 19, and the Logan Gas Co. will drill one on the Howard Becks 140 acres, Section 7, same township. The Ohio Fuel Gas Co. has blocked up a block of acreage in Cambridge Township, same county, and set a stake for a test 950 feet from the north line and 300 feet from the west line of the Harry M. Steele 26 acres, Section 6.

Illinois

Any wells of great value were few in the Illinois fields outside of the Wabash County Field of Wabash County, although the Central Field, of Centralia Township, Marion County, came to the fore with a 30-bbl. flush producer drilled by the Petro Oil & Gas Co., in its No. 7 in the northwest corner of the A. W. Webster farm, in the northwest quarter of Section 20. The top of sand was found at 764 feet and the oil at 12 feet in the sand. The Gorman-Huddleston Oil Co. abandoned its No. 2 in the northeast corner of the Clark & Boley lots, in the same section. The James Oil Co.'s second well on the Fannie MacIntosh lease, Section 4, same township, struck top of sand at 1,710 feet and had a very fine showing at 12 feet in the sand.

The test of the Pure Oil Co. on the Arthur Leamon farm, Section 4, Grandville Township, Jasper County, proved a duster at a depth of 1,417 feet. Wimsett and others are drilling a test on the M. Ritter farm, same section.

The Grayville Oil Syndicate is now drilling an important wildcat on the James M. Helm farm, 2 miles northwest of the town of Grayville, which leased up a block of several thousand acres between Grayville and Albion. Favorable reports on the location have been made by several geologists who have been through the tri-county section of Wabash, Edwards and White Counties scouting for new territory to drill. Increased activity in leasing has been under way throughout the section since plans of the new company were announced. There has been considerable acreage leased east of the Grayville Syndicate's acreage, between Grayville and Browns, where a trace of oil was found in a well on the Hoover farm last summer. There has also been leasing west of the new test now drilling on the Helm farm, and to the north, by other interests in the development of a new southern Illinois Field.

In the Friendsville Township area of Wabash County, in the new Bass Pool, the well of Clark, Oldendorf and others in the northwest corner of the J. O. Wood farm, Section 19, is an offset to the east of the discovery well of the pool on the Ezra Bass farm, and is estimated at better than 50 bbls. In Keller and others' No. 1 on the J. W. Price farm, same section, located 200 feet from the south line and 1,200 feet from the east line of the farm, in the southeast quarter of the northeast quarter of the section, sand was topped at 1,580 feet and drilled 12 feet in the sand, with a flush of 30 bbls. Healey, Lee and others' second test on the Ezra Bass farm, same section, is showing for a fair producer, as is Joe S. Young, Jr. and others' second venture on the John Price farm, same section. About 2 miles or so southwest of the Bass discovery well, the well drilled by Henneberger and others on the Robert Liddle farm, Section 26, is not showing for much of a producer but may make a light pumper, as the sand was very tight.

In Wabash Township, Wabash County, the Mount Carmel Oil Co.'s No. 4, 600 feet from the north line and 200 feet from the west line of the F. M. Leek farm, in the southwest quarter of Section 1, is reported at 55 bbls., with sand topped at 1,397 feet, and oil at 17 feet in the sand. W. C. McBride, Inc. brought in a test 900 feet from the south line and 200 feet from the west line of the Jemima Cisel farm, in the northeast quarter of Section 24, that pumped 12 bbls. with sand at 1,433 feet, and drilled 52 feet in the sand.

On Parker Prairie, in Parker Township, Clark County, the Ohio Oil Co.'s No. 26, on the J. S. Phillips farm, Section 18, pumped 2 bbls. at 501 feet. Mahutska Oil Co. is drilling No. 4 on the Harriette Slater farm, Section 30, Martinsville Township, and in Casey Township. W. C. McBride, Inc., is drilling No. 24 on the James Rush farm, Section 26. Northwest of Casey in Union Township, Cumberland County, Campbell, Peck and others are drilling No. 3 J. G. Paden, Section 1.

In Martin Township, Crawford Coun-

ty, the Ohio Oil Co.'s well on the William Dunlap farm, Section 12, is a dry hole as is the Frost Oil Co.'s No. 2 on the John Mulvane heirs' farm, same section. The Canadian Oil & Gas Co.'s No. 15, 1,120 feet from the south line and 190 feet from the east line of the E. E. Newlin, Section 31, Robinson Township, pumped 5 bbls. the first 24 hours. McNally & Star are drilling No. 7 on the Amelia E. Joseph farm, Section 23, Prairie Township. In Honey Creek Township, same county, Phipps, Cawood and others' No. 13 L. N. Tohill, Section 31, pumped 3 bbls., and Gealy & McDowell's No. 3 William C. Haas, Section 4, pumped 4 bbls. Hartman and others are drilling a test on the A. J. Vaught farm, Section 3, Russell Township, same county.

In Dennison Township, Lawrence County, Phipps, Blosser and others' test, 800 feet from the south line and 1,400 feet from the west line of the James Armstrong farm, in the southeast quarter of Section 25, was dry at 1,860 feet.

CALIFORNIA FIELDS

(Continued from Page 56)

which should be good for at least 500 bbls. daily.

Inglewood

Decreased drilling at Inglewood is also resulting in a production decline, although the drop in this field during the month of April was almost negligible. Some new work has been undertaken during the past few weeks, however, particularly by the Standard, and it is quite possible that this company will finish a new producer or two on the Baldwin Cienega or Vickers leases shortly.

Torrance

The Chanslor-Canfield Midway Oil Co.'s contribution during the past week was a 60-bbl. pumper at Torrance resulting from the completion of No. 89 Del Amo, put on the beam at 3,616 feet. The company immediately spudded in No. 45 Del Amo and this well will probably follow Nos. 39 and 63 on the same lease into production some time during the next 30 days. Rigs are going up for Nos. 51, 62 and 67, all on the Del Amo lease, but it is not believed that they will be spudded in until the three wells now being drilled have been put on production. No. 1 Hogan of the Petroleum Securities did not result in production, although it was bailed and swabbed for more than a day from 3,805 feet. The company will, however, put it on the beam and make a pumping test some time during the coming week. The Shell reconditioned No. 5 Torrance and it was returned to production pumping 90 bbls. after being cleaned out to bottom, 3,600 feet.

Huntington Beach

The Wilshire Oil Co. has temporarily suspended work on its new well in the newly opened area in the western part of Huntington Beach Field and, due to the fact that it is located on property owned in fee, it would not be surprising if the company held off indefinitely, or at least until such time as work in the immediate vicinity proved the existence of commercial production. The Julian Petroleum has a new rig up near by and, judging by the preparations being made, is contemplating immediate and continuous drilling. The Standard is doing considerable work on its lease B just north of the town lot area but the company is refraining from starting work near the town lot area in the hope of avoiding the inauguration of a drilling campaign in the newly opened section. The company's No. 45 on this lease is just coming in and looks good for about 500 bbls. daily. The California Petroleum is rotating ahead in No. 1 Buck at 3,530 feet but this northern outpost does not look any too promising.

Rideout Heights

The McCaslin Oil Co. is making preparations to finish No. 1 Patton-Gregg at Rideout Heights in the shallow zone at 1,345 feet and it is expected that the company will secure at least a 50-bbl. pumper. The Pan American's No. 1 Broderick in this area is drilling ahead at 3,520 feet and, although this well was spudded in after No. 1 Heights of the Petroleum Securities, the latter is only down 1,255 feet, due to the hard formation through which it has been passing. No. 3 Childs of the South Slope Oil Co. is nearing the 3,000-foot level and, although the York-Smullen Drilling Co. has not yet spudded in No. 1 Simmons, drilling should get under way within the next week or ten days.

Fullerton

The Brea Canyon Oil Co. was responsible for the addition of another producer in the Fullerton Field during the week, although it was comparatively small. The company's latest completion was No. 38, which came into production doing 250 bbls. of 29.7 gravity oil daily from 4,230 feet, after being plugged back from 4,250 feet. The output was somewhat of a disappointment but, since it is making over 5,000,000 feet of gas, it is quite possible that the oil production will build up when the large gas volume subsides. The General Petroleum has not undertaken any drilling work on its Tonner lease in this field for the past several years but the company is now putting up two new rigs and drilling will probably get under way within the next two or three weeks. The Union is running five strings of tools on its Stearns lease at Fullerton and, although these wells are in proven territory and will eventually come into production, Nos. 1 and 2 on the Olinda property do not look nearly as promising as they did several weeks ago. The Shell is erecting a rig for a new well on the Columbia lease and when it is spudded in the company will have six drilling projets on its hands in this area.

The Chicksan Oil Co.'s No. 1 Robinson at Coyote was finished early this week pumping 145 bbls. of 22.3 gravity oil from 4,183 feet and, although a little bottom water held up completion for a short time, the cement plug in bottom at 4,240 feet proved quite effective. The Union is getting ready to test out the deep sand possibilities of the Coyote Field through the instrumentality of No. 57 Graham & Loftus. Heretofore water trouble has prevented the making of a satisfactory production test but it looks as thought the Union has effected a shutoff at 5,212 feet and will drill ahead shortly.

Richfield

The Continental Oil Co. spudded in its second well at Richfield early this week and it is at present down about 500 feet. The Union is by far the largest single operator in this district and it is quite likely that the company will finish several producing wells during the next 60 to 90 days. The General Petroleum is working on two drillers, No. 6 Stearns and No. 7 Thompson, both of which are in proven territory and should come into production within the next 60 days. The Standard is only running two strings of tools in this district but will probably start work on another hole shortly, as a rig is going up for No. 22 Kraemer. That the company is not neglecting the Montebello Field is evidenced by the fact that it has one driller on the Baldwin, Temple, Harvey and Howard-Smith leases. The St. Helens Petroleum also has four drilling projects in this field, two on the Monterey lease and one on the Piuma & Hulholland properties and work will get under way shortly on another.

Vetura Avenue Field

The Associated brought in another good well in the Ventura Avenue Field a few days ago and will undoubtedly add another producer shortly as No. 18 Lloyd, in the southern part of the field, is being prepared for a test at 5,447 feet. The company's latest acquisition was No. 27 Lloyd, which literally blew in flowing 2,608 bbls. of 30.1 gravity oil and 2,000,000 feet of gas daily from an even 5,600 feet. It will probably be several weeks before Nos. 31, 32 and 33 on the Lloyd Lease and No. 4 Hartman will be ready for production tests, but inasmuch as they are going ahead steadily, they may come in sooner than expected. The Shell and General Petroleum are augmenting their drilling operations in this district and, although the former is already running 10 strings of tools, rigs are going up for three additional wells on the Edison, Gosnell and Taylor leases.

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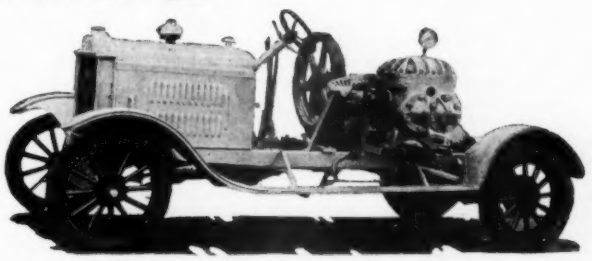

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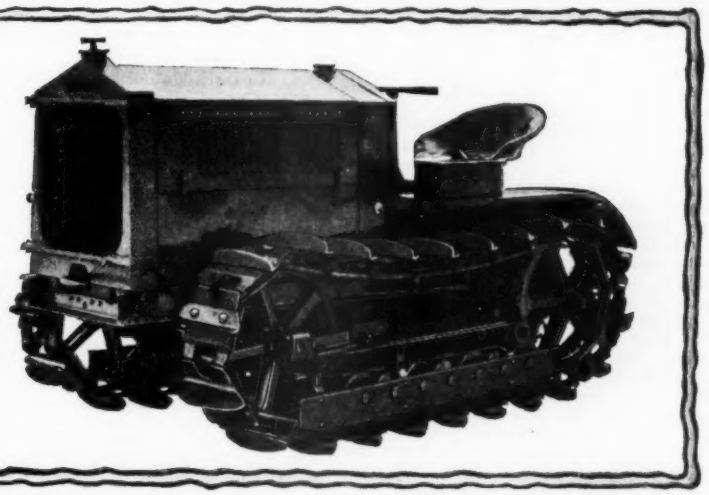

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spudded in No. 2 Barnard and is building rigs for Nos. 5-A, 6 and 7. No. 10 Notten threatened to come in prematurely from 5,340 feet but the crew succeeded in holding back the gas and it will be drilled a little deeper. The Petroleum Securities has just passed the 2,400-foot mark in its No. 1 Orton but ran into a fishing job in No. 1 Willett at 4,314 feet, at which point several stands of drill pipe were lost. The Bolsa Chica Oil Co. is drilling ahead very carefully and cautiously with No. 1 Hartman in the northern part of the field at 4,490 feet because of the heavy gas pressure and this well, together with the Associated's No. 2 McGonigle to the east, will be watched very closely during the next few months, although the latter has only recently been spudded in. Neither No. 1 Hobson of the Chanslor-Canfield Midway Oil Co. west of the Ventura Avenue Field at 4,188 feet, nor the Milham Exploration Co.'s No. 1 Sexton east of the producing area at 4,732 feet look promising for production at the present time.

Midway-Sunset

The Standard added two new producers in the Midway Field during the week and a similar number at Maricopa, although one of the latter, No. 15 Pacific in Section 25-12-24, turned out to be a gas well good for 2,000,000 feet daily from 3,050 feet. The Standard's other well at Maricopa was No. 16 Pacific in Section 31-12-23, good for 1,420 bbls. of 19.1 gravity oil daily. No. 61 Pacific in Section 31-31-24 was a 145-bbl. pumper from 3,385 feet, while No. 42 Pacific in Section 3-32-24, was good for 60 bbls. daily from 3,560 feet. The oil in each case tested 25.8 degrees and was comparatively clean. The Standard is doing considerable work on these former Pacific Oil properties and will undoubtedly continue to bring in new wells from time to time. The California Petroleum is listing No. 4 Dorothy in Section 34-32-24 for abandonment at 5,720 feet after failing to develop deep production.

The completion of the Shell's Poso Creek well a few weeks ago in Section 9-27-28, has caused a number of the petroleum clan to drift into Bakersfield to ascertain what it is all about. Numerous old-timers are looking over the situation and there is a considerable amount of leasing and swapping being done. Practically all available acreage in the immediate vicinity of the Shell's discovery well has been tied up for some time but there is some acreage to be had a mile or two away. The Shell killed No. 1 Vidder during the early part of the week with the intention of deepening it but only added an additional 32 feet of hole due to the presence of bottom water. A plug was immediately set at 1,957 feet and the well is back on the beam pumping steadily. It is quite likely that the Union, Barnsdall, Modoc, R. W. Edens, John K. Porter and the General Petrodeum will undertake at least one well each within the near future, although the rather low gravity of the oil may hold up work for some time, inasmuch as it is only bringing 75 cents per barrel.

Southern California Wildcats

The Associated has resumed drilling on its survey structure work on the Hellman lease at Seal Beach and it is believed that sufficient data will be secured and correlation work completed in the near future. The company's first diamond core hole was abandoned at 2,502 feet, while No. 2 was carried down to 503 feet. The present continuous core hole, No. 3, is going ahead at 296 feet. The Union cemented a surface string in its No. 1 Bryant in this area at 1,525 feet and, although Marland has erected a rig for No. 2 Bixby, spud has not yet been made. The Marland's No. 1 Connolly, a wildcat in the vicinity of Hyde Park, is rotating ahead in a hard gray sand at 5,270 feet and, although there have been no showings of importance to date, the company is continuing work in order that the outcome will be conclusive proof of the absence of commercial production in case of an abandonment.

The Union has dismantled No. 1 McNally, a duster at La Mirada, abandoned at 5,608 feet as a result of the unsatisfactory outlook at that depth. Mechanical trouble was also a contributing factor in the suspension of work. The Marland, after making several production tests on No. 1 Wickham in the Newhall-Saugus area, has decided to go ahead and will resume drilling at 2,717 feet. The Milham Exploration Co.'s Playa del Rey wildcat is in a hard sand at 5,200 feet and the absence of any upper markers seems to indicate that the well will be dry. The Barnsdall has erected a new steel derrick for No. 1 Merlo, a wildcat in the Puente El Monte area, Section 35-1-11, and spud will be made as soon as the preliminary preparations have been completed.

The Standard's San Fernado wildcat, No. 1 University, is rotating ahead in a conglomerate at 800 feet but going ahead steadily. The Petroleum Securities has also entered the San Fernando Valley area and, although the company denied it was seeking acreage in that section some time ago, a location has been staked for No. 1 Porter, north of the town of Zelza in Section 14-2-16. The Standard is going ahead very slowly with its Topango Canyon wildcat and spud has been held up pending the construction of roads which will permit easier handling of equipment. Due to the lack of sufficient water the hole will be drilled with standard tools, although rotary equipment may be installed at a later date.

The Manhattan-Hermosa Beach area will undoubtedly be a very popular point of concentration for oil scouts and lease hounds because of the fact that George W. Johnson will make a production test of his wildcat in that area, which has penetrated approximately 80 feet of oil sand. The water test proved satisfactory and, although geologists are divided as to the possibility of securing commercial production, Johnson is very optimistic over the prospects and will be keenly disappointed if this well fails to make the grade. The Julian Petroleum Corp.'s No. 1 Hellman at 3,986 feet has not yet picked up the pay found by Johnson, notwithstanding the fact that it is 60 feet deeper. H. A. Bardeen, who is working ing on the third hole in this area, believes he has mastered the water situation and expects to determine this definitely within the next few days.

Northern California Wildcats

The Chanslor-Canfield Midway Oil Co. has finally abandoned its Delano wildcat at 3,874 feet and, although the log shows a small oil showing, it was of minor importance. The unfavorable outlook, together with a troublesome water condition, resulted in the final decision to abandon. The Fresno-Madera Oil Co. made a production test of its wildcat near Clovis in Fresno County and, although it showed a few colors, it looks rater disappointing. W. W. Taylor's wildcat, also in this vicinity, is standing cemented at 365 feet but drilling will be resumed shortly and a test made of the 5,000-acre tract held under lease. The Associated is making preparations to land a protective string of casing in its Huron wildcat on bottom at 1,800 feet. Although the Associated did not think the Raisin City area warranted any further work the Fresno-United Oil Co. is not willing to quit and is going ahead in its third hole in this area at 2,000 feet.

There were no new developments in the Kettleman Hills during the week, although the Bolsa Chica and Marland resumed drilling in their respective tests. The Standard is building a rig for a new wildcat approximately 2 miles northeast of Camarillo and, although Hoyt S. Gale is abandoning his second hole in this area, the company is not satisfied with the results attained to date. No. 1 Berlywood of the Shell at Moorpark is drilling ahead in a hard sand at 3,690 feet. Oscar Howard and King Gillette's new well on South Mountain is drilling ahead in a sandy shale at 1,100 feet and it will undoubtedly be pushed forward to a successful conclusion.

KANSAS FIELDS

(Continued from Page 43)

Co.'s No. 1, SW cor. Section 8-22-10, is dry at 2,576 feet. Theta Oil Co.'s No. 10, NE cor. SW SE, Section 8-22-10, is drilling at 1,050 feet; No. 11, NE cor. SE SW, Section 8-22-10, is drilling at 1,250 feet. Theta Oil Co. is drilling at 500 feet in No. 12, SW cor. NW SE, Section 8-22-10. Davis & Hazlett have completed No. 15, NW cor. SE, Section 12-22-10, for 460 bbls. after a shot of 320 quarts in sand at 2,051-2,137 feet. Hazlett and others' No. 16, SW cor. SE NE, Section 12-22-10, had sand at 2,026-96 feet and made 600 bbls. after a shot of 275 quarts. Hazlett and others have a rig up for No. 18 DeMalhourie, SW cor. NW SE, Section 12-22-10. Manhattan Oil Co.'s No. 6, SW cor. NE NE, Section 12-22-10, made 250 bbls. after a shot of 160 quarts in sand at 2,007-2,040 feet. Prairie Oil & Gas Co. is drilling at 740 feet in No. 3, NE cor. SW NW, Section 12-22-10. Syndicate Oil Co.'s No. 3, SW cor. NE NW, Section 12-22-10, had sand at 2,037-2,128 feet and made 270 bbls. after a shot of 240 quarts.

White Eagle Oil Co.'s No. 3, NW cor. SE NW, Section 12-22-10, had sand at 2,047-2,131 feet and made 125 bbls. after a shot of 140 quarts. Sinclair Oil & Gas Co. is drilling at 1,350 feet in No. 40, C W half SE, Section 19-22-10; No. 39, NE cor. SW, Section 20-22-10, had sand at 2,240-2,305 feet and was shot with 10 quarts and made 200 bbls; the rig is up for No. 41 Browning, NW cor. SE NW, Section 20-22-16; the rig is on the ground for No. 42 Browning, C SW SW, Section 20-22-10. Neely Oil & Gas Co.'s No. 1, NW cor. SE, Section 27-22-10, is dry at 2,322 feet.

The Texas Company's No. 6, NW cor. SW SW, Section 29-22-10, made 170 bbls. after a shot of 120 quarts in sand at 2,403-45 feet; No. 8, SW cor. NE SW, Section 29-22-10, is drilling at 1,500 feet; the Tidal Oil Co.'s No. 4, CWL SW NW, Section 29-22-10, is drilling at 1,400 feet; No. 8, CNL NW, Section 29-22-10, had sand at 2,383-2,448 feet and made 250 bbls. after a shot of 120 quarts; No. 13, C NW, Section 29-22-10, had sand at 2,333-2,400 feet and made 300 bbls. after a shot of 100 quarts. Manhattan Oil Co.'s No. 6, NE cor. SE NE, Section 2-23-9, made 70 bbls. after a shot of 100 quarts in sand at 2,365-2,407 feet. Sheedy and others are drilling at 500 feet in No. 8, NE cor. SW NW, Section 11-23-9. Emerald Oil Co. is drilling at 800 feet in No. 2, NW cor. SE NW, Section 23-23-9. Phillips Petroleum Co. and others have a machine in for No. 1 Smith, SW cor. SW, Section 10-23-10. Roth, Faurot and others No. 7, CWL NE NW, Section 27-23-10, made 25 bbls. after a shot of 40 quarts in sand at 2,307-29 feet; No. 23, NW cor. SW SE, Section 29-23-10, had sand at 2,325-42 feet and made 30 bbls. after a shot of 40 quarts.

Empire Gas & Fuel Co.'s No. 7, NE cor. SW SW, Section 11-22-11, had sand at 1,823-76 feet and made 100 bbls. oil and 20 bbls. water after a shot of 120 quarts; No. 12, C NW NW, Section 11-22-11, had sand at 1,821-83 feet and made 230 bbls. after a shot of 250 quarts; the rig is up for No. 13 Kipfer, NW cor. SE, SE, Section 11-22-11; No. 5, SE cor. NW SW, Section 14-22-11, had sand at 1,882-1,916 feet and made 115 bbls. after a shot of 100 quarts; No. 5, NW cor. NE SE, Section 15-22-11, is drilling at 950 feet; No. 6, NE cor. SE SE, Section 15-22-11, is drilling at 650 feet. F. K. Simmons is spudded and shut down in No. 2, SE cor. SW NW, Section 18-22-11. Selby Oil & Gas Co. has a failure at 2,200 feet in No. 3, NE cor. SW NW, Section 19-22-11. Simmons and others' No. 4, SW cor. NE NW, Section 19-22-11, is spudded and shut down. Titus and others have a dry hole at 2,168 feet in No. 1, SE cor. NW, Section 28-22-11. York State Oil Co.'s No. 7, NW cor. SE NW, Section 32-22-11, had sand at 1,955-2,015 feet and made 300 bbls. after a shot of 160 quarts. Phillips Petroleum Co.'s No. 6, SW cor. SE SW, Section 33-22-11, had sand at 1,893-1,924 feet and made 140 bbls. after a shot of 120 quarts. York State Oil Co.'s No. 8, CSL SW NW, Section 33-22-11, made 150 bbls. after a shot of 80 quarts in sand at 1,910-38 feet. The Empire Gas & Fuel Co. and others' No. 1, NW cor. SW SE, Section 4-22-12, had sand at 1,802-25 feet and made 350 bbls. oil and 20 bbls. water after a shot of 100 quarts.

The Arkansas Fuel Co. has the rig up for No. 15 Marshall, NE cor. SE SW, Section 1-24-9. Roth-Faurot and the Manhattan Oil Co. have a rig up for No. 12 Cashwright, NE cor. SW NE, Section 1-24-9. Davis & O'Flaherty have spudded and shut down No. 1 Nixon, SE cor. NE NE, Section 25-24-10. Hoyt & Starkey have a dry hole at 2,202 feet in No. 1, SW cor. NW NW, Section 28-25-10. White Oil Co.'s No. 2, SW cor. NW NE, Section 35-25-10, is dry at 2,060 feet. Manhattan Oil Co. and Phillips Petroleum Co. are drilling at 540 feet in No. 1, NE cor. SW NE, Section 19-24-11.

Ward McGinnis has a rig up for No. 5-A Wiggins, NW cor. NE SW, Section 30-24-11; No. 3 Wiggins, SW cor. SE NW, Section 30-24-11, had sand at 1,766-87 feet and made 250 bbls. after a shot of 100 quarts; the rig is on the ground for No. 1 Wiggins, NE cor. NW SW, Section 30-24-11; No. 4 Wiggins, NE cor. SE NW, Section 30-24-11, had sand at 1,796-1,820 feet and made 270 bbls. after a shot of 100 quarts; No. 5, SE cor. NE NW, Section 30-24-11, is drilling at 900 feet. Polhamus and others' No. 1, SE cor. NW, Section 32-24-11, is dry at 1,967 feet.

Abel & Rhodes have completed No. 4, SE cor. SW NE, Section 16-24-13, for 15 bbls. after a shot of 80 quarts in sand at 1,628-56 feet. Skelly Oil Co. has a machine in for No. 1 Storey, NW cor. SE NW, Section 27-24-13. Charles Christy's No. 3, SE cor. SW SE, Section 31-24-13, had sand at 1,505-1548 feet and made 90 bbls. after a shot of 40 quarts.

Coffey County

O. J. Connell has a machine in for No. 1 Pierson, NE cor. SE NW, Section 29-20-17.

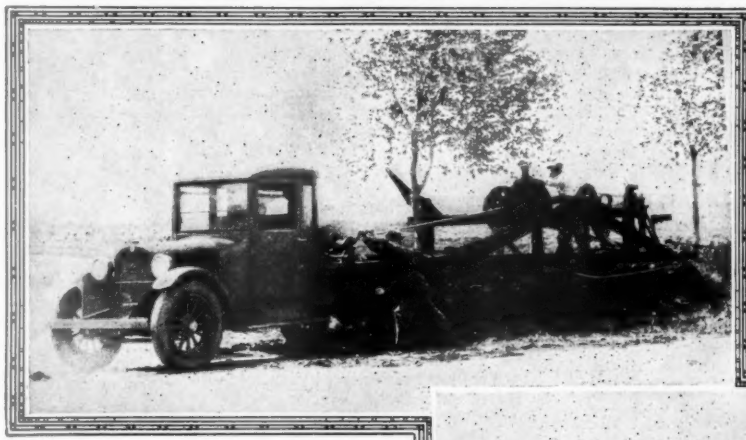
Lyon County

Connell and others' No. 1, SW cor. NW, Section 23-18-10, is dry at 2,360 feet. Markham & Horrigan have a rig on the ground for No. 1 Baker, NW cor. SE, Section 27-18-11. Derby Oil Co.'s No. 1 Hunter, NW cor. NW, Section 11-19-12, is drilling at 450 feet. Bucher and others' No. 1 Cook, SW cor. SW, Section 25-19-12, is a new rig. Double A Oil Co. is drilling at 1,500 feet in No. 1, SW cor. SE SW, Section 20-18-13. Watchorn Oil & Gas Co. is drilling at 1,000 feet in No. 1, NE cor. SW, Section 21-18-13. Ballierre and others' No. 1, SE cor. NE, Section 33-19-13. is dry at 1,960 feet. McMahon & Lemord's No. 1, SW cor. SE, Section 5-19-14, is dry at 1,510 feet. Sheedy and others are drilling at 800 feet in No. 1, SE cor. NW, Section 32-20-10. Prairie Oil & Gas Co. has a dry hole at 2,789 feet in No. 1, SE cor. NE, Section 5-21-10. Sheedy and others' No. 1, NW cor. SE, Section 7-21-10, is drilling at 900 feet. McCulloch Oil Co.'s No. 1, CSL SE SW, Section 24-21-10, is drilling at 900 feet. Transcontinental Oil Co.'s No. 3, SW cor. SE NW, Section 31-21-10, is drilling at 450 feet; the rig is up for No. 4 Atyeo, SE cor. SW NW, Section 31-21-10. Sinclair Oil & Gas Co. and others are rigging up No. 1 James, SE cor. NE SW, Section 7-20-11. Mississippi Valley Oil Co.'s No. 1, NW cor. SE, Section 25-20-11, is dry at 2,165 feet. Marland Oil Co. has a dry hole at 2,435 feet in No. 1, NE cor. NW NW, Section 18-20-12. Mississippi Valley Oil Co.'s No. 1, C SW SE, Section 3-21-11, is dry at 2,568 feet. Fisher, Louck & Moore's No. 1, SW cor. NW SW, Section 11-21-11, is dry at 2,182 feet. Emerald Oil Co. has a rig on the ground for No. 1 Rosalia, SW cor. NW, Section 19-21-11. O. H. Pickering is drilling at 900 feet in No. 1, NW cor. SE, Section 18-21-12. Phillips Petroleum Co. has the rig up for No. 10 Louck, NW cor. SE SW, Section 33-21-12; and No. 11 Louck, NE cor. SW SW, Section 33-21-12, is drilling at 500 feet. Greenland Oil Co. and Phillips Petroleum Co. are drilling at 1,100 feet in No. 1, NW cor. SW NW, Section 35-21-12.

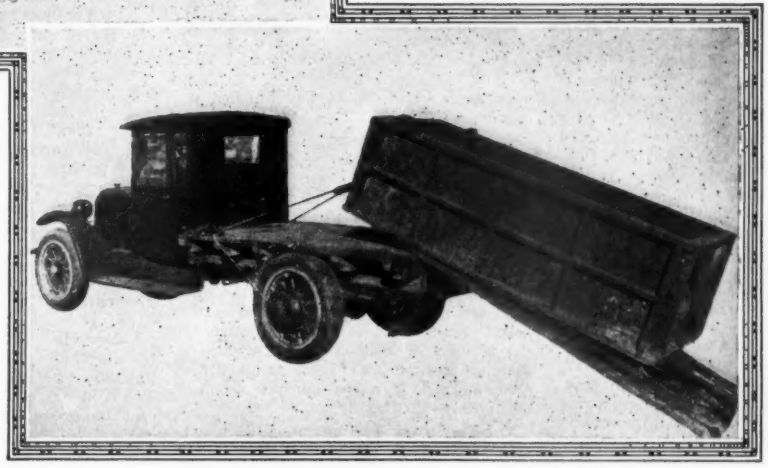
Manhattan Oil Co.'s No. 1, SE cor. NW, Section 6-16-12, is dry at 2,567 feet. H. F. Wilcox Oil & Gas Co.'s No. 1, NE

XUM

YESTERDAY



TODAY



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Tulsa, Oklahoma
Sole Manufacturers

THE R-B WINCH

Operates Independent of Wheel *No Need of Jacking Up Wheel*

cor. NW. Section 33-17-11, is drilling at 1,500 feet.

Marion County

Troup and others' No. 1, NE cor. SW. Section 8-19-4, had sand at 2,365-67 feet and made 3,500,000 feet of gas.

Elk County

Owen-Osage company's No. 1 Knoll, SE cor. SW SW. Section 9-28-11, is drilling at 1,145 feet.

Chase County

Denton and others' No. 1, SW cor. SE. Section 5-21-9, is dry at 2,530 feet.

CANADIAN FIELDS

(Continued from Page 48)

oil rather than wet gas when the limestone is penetrated.

Dallas Oil Co. No. 1, LSD 11, Section 20-19-2w5, is below 650 feet and drilling for 15½-inch casing, which will be carried to 1,500 feet. The drill is in the Benton shale. Home Oil Co., LSD 10, Section 2-19-2w5, has finished a troublesome fishing job and is drilling at 180 feet. The 20-inch casing will be carried somewhat below this level. Advance Oil Co. No. 1, LSD 14, Section 20-19-2w5, is lifting casing preparatory to underreaming for the 8¼-inch casing to the bottom of the hole at 3,160 feet. Advance No. 2, same section, has spudded in. Great West Oil Co. No. 1, SE Section 7-20-2w5, has set 20-inch casing at 1,110 feet and is now drilling at 1,128 feet. Great West No. 2, same section, is rigging up.

British Dominion No. 1, LSD 4, Section 5-20-2w5, is reported ready to spud in. Mid-Valley Oil Co., LSD 12, Section 5-20-2w5, is clearing the site for a derrick. W. E. Robinson is field engineer. Lancashire Oils, Ltd., incorporated under Dominion charter with head office at Calgary and $500,000 capitalization, has located No. 1 test in LSD 12, Section 3-20-3w5. Officers of the company are: President, J. T. Wilson; vice president, John Bruehlman; secretary-treasurer, A. E. Bailey; directors, George Daniels, William Gill.

Roberta Oils, Ltd., has located No. 1 test in NE LSD 16, Section 19-19-2w5. Belco-Canadian No. 1 (formerly Record No. 1), Section 4-19-2w5, has a new derrick up and is waiting for machinery. The crew will clean out the hole and recover lost tools before resuming drilling at 4,327 feet. V. J. Hastings, representing eastern interests, has secured acreage in LSD 10, 11, 12 and 15, Section 4-21-3w5, and will drill this summer.

Homestake Oils, Ltd., has spotted a test in LSD 5, Section 3-20-3w5, and is bringing in a drilling outfit. New York-Alberta Oil Co., LSD 6, Section 20-19-2w5, has a derrick up and is waiting for machinery. Mammoth Oil & Development Co. has a location in LSD 2, Section 24-20-3w5. New Valley Oil Co., LSD 4, Section 6-21-2w5, is rigging up for a test. Cooper-Nanton No. 1 LSD 2, Section 7-20-2w5, has a derrick up and is installing machinery. The test will likely spud in early in June. Drillers Brown and Weaver from the Oklahoma fields will handle this test. Officers of the company are: President, J. T. Cooper; secretary-treasurer and managing director, J. E. Lodge; directors, F. A. Kilbourn, Fred L. Irving, R. M. Dingwall, W. P. Taylor, W. D. Ransom.

To Drill in Montana

In the north end of the Turner Valley, Warner Oils, Ltd., has spotted a test in LSD 1, Section 27-29-3w5. The company is incorporated under Dominion charter with 500,000 capitalization and head office at Calgary. The company will also drill a test in the Montana fields 3½ miles west of Kevin.

Wincalva Oils, Ltd., is reported to have made a tentative location in SW Section 36-19-3w5. Delphi Oils, Ltd., capitalized at $500,000 with head office at Calgary, has located a test in NE LSD 16, Section 18-20-2w5. The company will also drill in the Montana fields. Officers are: President, W. F. McGill; vice president and managing director, F. Naylor; directors, W. Colpitts, W. Halfpenny of Calgary, and F. E. Atkinson of Vulcan. Scotia Oils, Ltd., are reported moving timbers to location in LSD 13, Section 5-19-2w5.

Co-Operative Oil Service, Ltd., has a location in LSD 8, Section 1-20-3w5. Confederation Oil Co. has located a test in LSD 14, Section 34-19-3w5. Eldorado Oil Co. has a location in LSD 2, Section 34-19-3w5. Empress Oils, Ltd., has spotted a test in Section 5-20-2w5. Golconda Oil Co. has taken over an unfinished test in LSD 13, Section 26-19-3w5, and is casing at 1,128 feet. Highland Oils, Ltd., has a rig up in LSD 5, Section 5-20-2w5. McLaren Oil Co. has a location in LSD 3, Section 3-20-3w5. Model Oils, Ltd., has located a test in LSD 8, Section 22-20-3w5. Mountain Oils, Ltd., has located a test in LSD 8, Section 34-19-3w5. Vanguard Oil Co. has spotted a test in LSD 1, Section 34-19-3w5. Turvalta Oils, Ltd., has a tentative location in LSD 14, Section 5-20-2w5. Alert Oils, Ltd., has located a test in NE LSD 7, Section 31-19-2w5.

Moose Mountain

In the Moose Mountain district, Reserve Oils, Ltd., on the Morley Indian reserve has resumed drilling and is reported at 102 feet. Cherokee Oil Co., Section 33-23-5w5, has resumed its diamond drill test at 1,664 feet, with traces of oil reported. Signal Hill No. 2 LSD 9, Section 34-23-5w5, has finished 7 miles of road to location and is now rigging up. Signal Hill No. 1 has finished underreaming to 2,025 feet and is waiting for 6¼-inch casing.

Extensive filing is reported in the Claresholm district on a structure in Townships 11 and 12, Range 28w4, along the east slope of the Porcupine Hills, 50 miles south of the Turner Valley. Shallow gas was struck some years ago at 300 feet on the John Smedstead farm, and gas has also been encountered in the town of Claresholm. A Claresholm syndicate is being organized to test the structure. In the vicinity of Hutton, a Calgary syndicate has filed on 2,000 acres and will drill this summer. Shallow gas has also been encountered in this area.

Oil Producers of Canada, Ltd., organized by Montana interests, will drill this summer on the Ribstone-Blackfoot anticline in east central Alberta, and may also test acreage near Aldersyde, south of Calgary. In the High River district, High River Oils, Ltd., is reported rigging up in LSD 11, Section 6-19-28w4. Ranchmens Oil Co. has a location in Section 13-20-29w4. In the vicinity of Olds, the Coates Syndicate of Didsbury, Alta., is reported rigging up a test.

Shank Lake Oils, Ltd., of Calgary will drill a test this summer in the Milk River area, either in Section 6-2-21w4 or Section 1-2-22w4, the former south and the latter north of the river. This is likely a deep drilling test, for though there are possibilities of oil and gas in the Milk River sandstone at 800 feet, the Kootenay formation is around 4,200 feet, the Ellis at about 4,600 feet and the Madison limestone at 4,800 feet. Shank Lake Oils, Ltd., has secured 640 acres from the Central Oil Syndicate which has blanketed the entire structure.

Bow Island Field

In the Bow Island Field, an important deep test for oil is being started by Imperial Oil, Ltd., which has entered into an agreement with the Gas Production & Transportation Co., a subsidiary of the Canadian Western Natural Gas, Light, Heat & Power Co., for drilling rights on some 10,000 acres in the Bow Island Field. Development will be on a royalty basis. It is reported the location is east of the Thacker farm about 5 miles northwest of Bow Island. The camp is now being constructed. This is the first deep test for oil in this section of Alberta, and it is planned to drill to the limestone if possible. If the test turns out to be a gas well, it will be taken over by the Canadian Western for gas production.

It is unofficially reported that Imperial Oil, Ltd., is planning to drill a second test in the Border area west of Coutts. Some years ago the Imperial Oil, Ltd., Red Coulee test, Section 5-1-16w4, got a small show of oil but was abandoned after being drilled below 2,500 feet without getting commercial production. It is reported that the new test will be drilled near the Red Coulee well but lower on the structure.

In the Coutts area, Urban Oils, Ltd., is reported drilling at 2,850 feet with some water seeping into the hole, and making slow headway in a very hard formation. West of Sweetgrass, on the Montana side, the Monalta well on the T. O. Johnson farm is shut down at 1,860 feet waiting for 10-inch casing. In the Foremost Field, United Oils' No. 1 is reported at 1,930 feet and drilling.

In the Pincher Creek district, in the foothills close to the Montana boundary, there have been heavy filings by United States interests. Imperial Oil, Ltd., put down two deep tests in the Twin Butte section some years ago, without securing production.

Saskatchewan Fields

In the province of Saskatchewan, the Unity Valley Oil Co. has spotted a test in SE Section 23-41-24w3, near Vera station. This is in entirely untested territory, though a favorable structure has been reported by S. F. Flater and Charles Richardson. A rotary outfit is being unloaded at Unity.

In the Flathead Valley, in southeastern British Columbia, the Glacier Oil Co. of Spokane, Wash., is reported down 3,105 feet, with some gas and 2,600 feet of oil in the hole. The well was started some years ago by other Spokane interests and was recently taken over by the Glacier. The rig was burned down early this spring, but the test is now being got in shape to resume.

In the Ontario fields, the Colchester Oil & Gas Co. E. P. Rowe deep test, in Zone Township, Kent County, has been carried to the bottom of the Trenton limestone at 3,970 feet, and is being shot in that formation.

Malcolm Riker of Cleveland, Ohio, is interesting Petrolia capital in a project to increase the production of the old shallow wells in the Petrolia-Enniskillen Feld by the use of electricity to heat the producing sands. Hydro-electric current is available in the field, having been used for some years to operate many of the pumping plants, and it is estimated that a $150 installation for each well will materially increase the production. The experiment will probably be tried out on a small scale this summer.

Railway to Oil Field

The Calgary & Southwestern Railway, incorporated some time ago to connect Calgary with the coal mines to the south, has secured an amendment to its charter to enable it to run a branch line to the Turner Valley oil field.

The Union Oil Co. of Canada has commenced work on the first $25,000 unit of a distributing plant at Edmonton, Alberta. Plans contemplate a complete distributing plant of five units, the first to be operating before the end of July.

Under the new Federal budget, all supplies used in the oil fields, including steel tubing and pumping equipment, are exempted from sales tax.

ARTESIA, NEW MEXICO

(Continued from Page 46)

ing for a string of lost pipe the Arkansas Gas & Fuel Co. has abandoned its deep test on Manning Dome, the depth being 3,380 feet.

On the Dunken Dome, The Texas Company has succeeded in straightening the hole and has resumed drilling No. 1 at 275 feet, it being necessary to plug the hole back from 450 feet.

A boost in the price of gasoline of 3 cents per gallon was made here during the week.

Eddy County Drilling

Colorado Drilling Co.'s No. 1 Irvin, Section 8-16-27, gassing, shut down; Compton's No. 2 Mann permit, Section 3-18-27, ready to start operations; Compton-Hasenfuss & Lewellyn's No. 1, Section 16-18-28, swabbing; Decum Development Co.'s No. 1 Vandagriff permit, Section 5-17-28, shut down; Empire Gas & Fuel Co.'s No. 1, Section 35-17-27, drilling 500 feet; Flynn, Welch & Yates' No. 39, SE Section 21-18-28, drilling below 2,770 feet; No. 43, SE cor. NE, Section 28-18-28, drilling at 2,660 feet; No. 45, NE SE, Section 21-18-28, drilling in at 2,192 feet; No. 4 Keyes, in the NW cor. of Section 21-18-28, drilling below 600 feet; No. 46, Section 28-18-28, drilling at 1,000 feet; No. 47, same section, drilling at 1,750 feet; No. 48, Section 21-18-28, drilling at 450 feet; Fletcher Oil Co.'s No. 1, Section 5-19-28, pumping; Hasenfuss & Donley's No. 1, Section 13-18-28, on production; No. 2, in the NW cor. NE NE, same section, rigging up; Harris & Rehn and others' No. 1 Winans, Section 15-18-26, drilling 600 feet; Hamilton Petroleum Co.'s No. 1 Billings, Section 12-19-26, drilling; Mesa Oil Co.'s No. 1, Section 4-19-28, pumping; Navajo Oil Co.'s No. 1, Section 28-17-28, on production; Ohio Oil Co.'s No. 5 Toomie Allen, Section 28-18-28, cleaning out after shot; No. 9 New States, Section 4-18-28, plugging back from 4,035 to 2,250 feet; Picher Oil Co.'s No. 3 Cronin permit, Section 12-18-27, fishing at 550 feet; Swartz, Compton & Eaton's No. 1 Brainard permit, Section 5-18-27, shut down for repairs at 1,595 feet; Sun Oil Co.'s No. 1, building steel derrick for 3,500-foot deep test in the SE of Section 21-25-30; Twin Lakes Oil Co.'s No. 8 in the NW cor. SW, Section 28-18-28, drilling at 2,500 feet; The Texas Company's No. 5 Bobb permit, Section 17-17-28, drilling below 2,000 feet, making 250,000 feet of gas; Wade & Bujac's No. 1 Goodale permit, Section 19-18-29, resumed drilling at 1,700 feet; Wooley & Jones' No. 1 Beeson, Section 33-17-30, shut down at 1,940 feet.

Chaves County

Arkansas Gas & Fuel Co.'s No. 1 Manning Dome, Section 14-15-17, plugging hole at 3,380 feet; Colorado Gas & Fuel Co.'s No. 1, Section 16-8-27, drilling below 5,030 feet; Neal and others' No. 1, Section 25-9-29, reported to have struck salt water below 1,400 feet; Rogers' No. 1 Purcell, Section 15-11-26, pumping 4 bbls. from shallow sand; The Texas Company's No. 1 Dunken Dome, drilling at 275 feet after straightening crooked hole.

Lea County

J. S. Covert's No. 1, Section 15-21-33, underreaming 12½-inch pipe at 375 feet; Inglefield-Bridges' No. 41, Section 4-17-34, rigging up; Maljamar Oil & Gas Corp.'s No. 1 Simson permit, validating hole in SW cor. Section 29-17-32; No. 1 Baish, drilling at 3,850 feet; No. 1 Grace Mitchell permit, Section 5-17-32, waiting for fuel to start drilling; No. 1 S. Beardsley permit, Section 15-17-32 validated; No. 1 Pearsall permit, Section 33-17-32, waiting for tools; No. 1 William Mitchell permit, Section 17-17-32, drilling 200 feet; No. 1 Pearl Miller permit, Section 23-17-32, drilling below 475 feet; Shugart and others' No. 1, location in Section 1-17-31.

N. LOUISIANA-ARKANSAS

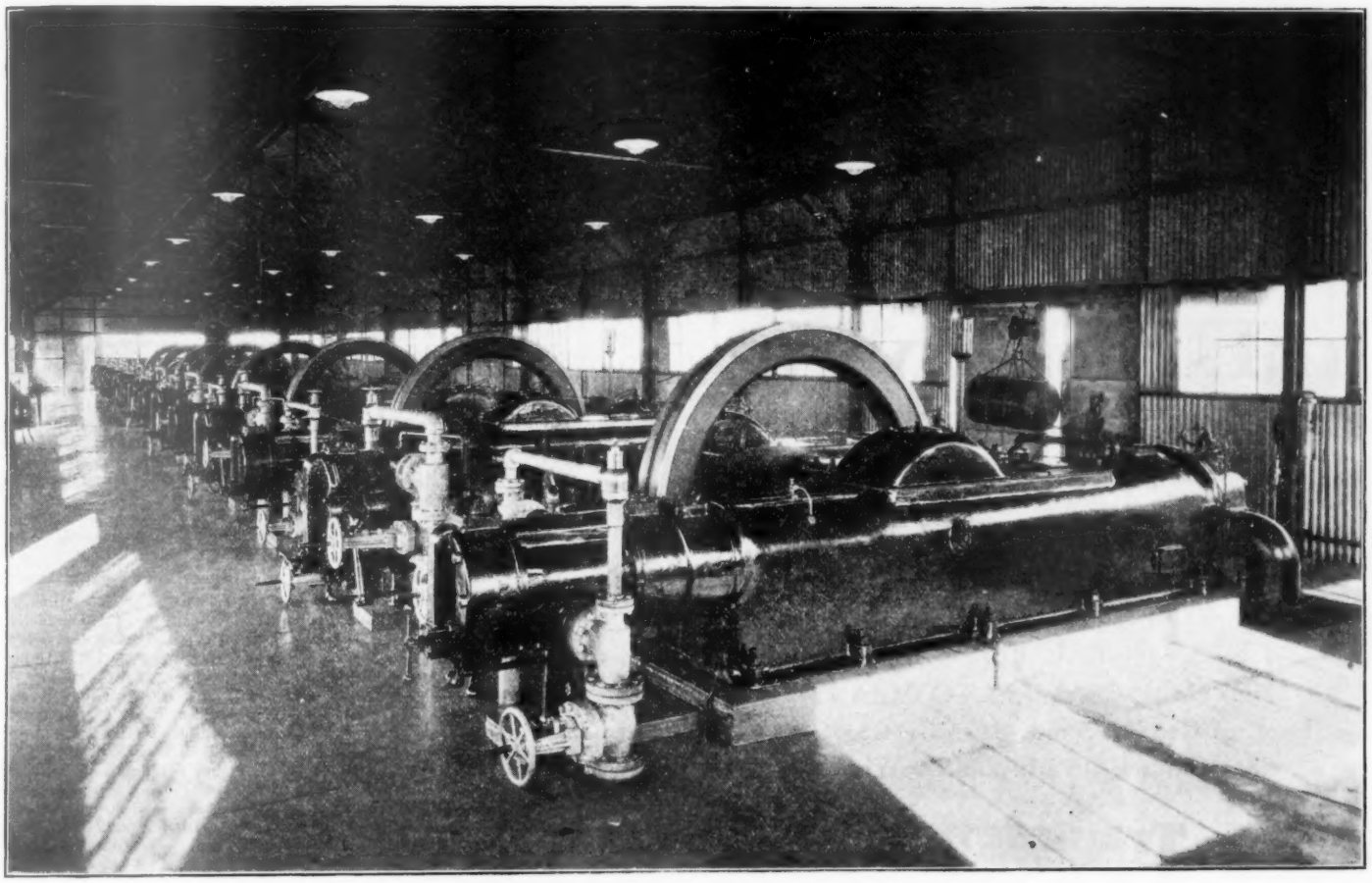
(Continued from Page 46)

sand at 2,120-60 feet and is waiting for a standard rig.

Coring Deep Test

Hickman and associates' deep test in the field, No. 1 Slaughter, Section 3-17-16, is coring at 2,661 feet. Surface casing was cemented at 2,086 feet at Humble Oil & Refining Co.'s No. 2 Goodwin, Section 16-17-16, and at 2,115 feet at No. 5 Goodwin; a derrick is being erected for No. 4 Goodwin, 1,650 feet south and 330 west, NE SW. A rig is up for Humble's No. 3 Slaughter, NW cor. Section 10-17-16. H. L. Hunt's northern Lisbon extensioner, No. 1 Murphy, Section 4-17-16, bailed dry at 2,084 to 2,120 feet. The hole has 250 feet of fluid in it and is being cleaned and prepared for a shot. Surface casing was set at 207 feet at Imperial Oil & Gas Co.'s No. 1 Goodwin, Section 26-17-16, and No. 2 Primm, Section 21-17-16, is waiting for the 6-inch to set at 2,120 feet.

Keisker and associates' No. 1 Harrell, Section 15-17-16, is being reamed to the bottom at 2,090 feet to set 6-inch. Long and associates' No. 2 White, Section 17-17-16, was drilled to 2,080 feet and 6-inch casing has been cemented at 2,044 feet. On the Magnolia Petroleum Co.'s Dumas lease, Section 9-17-16, derricks are being built for No. 2 and No. 6 and No. 5 is



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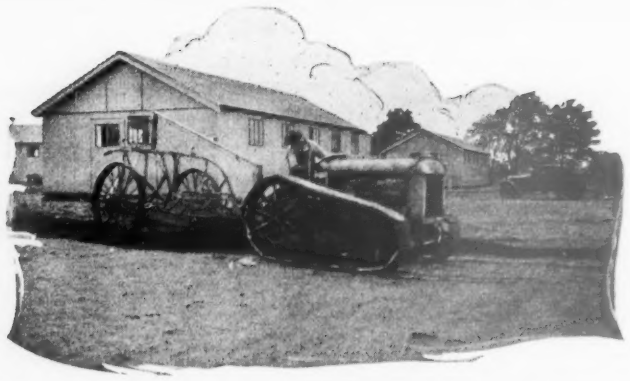

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waiting for the 6-inch casing to set at 2,068 feet. Six and five-eighths inch casing was cemented at 2,076 feet at Magnolia's No. 1 Harrell, Section 4-17-16. On the Magnolia's Slaughter lease, Section 9-17-16, a rig is being moved in for No. 6; surface casing was set at 293 feet at No. 7; 6⅝-inch casing was cemented at 2,096 feet at No. 8 and the liner is being set to test 30 feet of sand topped at 2,106 feet at No. 9. A rig is up for Miller & Cottingham's No. 6 Slaughter, CWL NW NE, Section 9-17-16.

Natural Gas & Fuel Corp.'s No. 5 Andress, Section 16-17-16, is being swabbed to test sand at 2,136-58 feet. Surface casing was set at 82 feet and Natural's No. 1 Willett, Section 4-17-16, is drilling ahead at 1,400 feet. Ohio Oil Co.'s No. 2 Goodwin, Section 21-17-16, is being swabbed to test 30 feet of sand topped at 2,100 feet and a rig is up for No. 3 Goodwin, NE NW NE, Section 21-17-16. Six and five-eighths-inch casing was cemented at 2,104 feet at Owens and associates' No. 5 Slaughter, Section 4-17-16. Six-inch casing was cemented at 2,074 feet at Pure Oil Co.'s No. 4 Dumas, Section 9-17-16. Pure's No. 1 Harrell, Section 4-17-16, is a rig. On the Pure's Slaughter lease, No. 2 has 500 feet of oil in the hole from sand at 2,112-52 feet and is waiting for a standard rig; No. 3 is drilling at 1,945 feet and No. 4 is drilling at 1,087 feet.

Reynolds & Marrs' No. 1 Mooty, Section 22-17-16, is waiting for the 6-inch casing to set at 2,132 feet. Rovenger Oil Corp.'s No. 5 Goodwin, Section 16-17-16, is waiting for the 6-inch to set at 2,080 feet and a derrick is standing for No. 2-B, SE SW NW, Section 16-17-16. On the Rovenger's Graham lease, Section 16-17-16, 6⅝-inch casing was cemented at 2,080 feet at No. 3 and derrick built for No. 4, SE cor. Section. Rovenger's No. 2 Harrell, Section 15-17-16, is a derrick. Roxana Petroleum Corp.'s No. 5 Flourney, Section 4-17-16, is drilling at 1,240 feet. On the Simms Oil Co.'s Perry lease, Section 16-17-16, 6⅝-inch casing was cemented at 2,063 feet and the test is being bailed to test 20 feet of sand topped at 2,080 feet; 6⅝-inch casing was cemented at 2,080 feet at No. 5; No. 6 is being swabbed to test sand at 2,078 to 2,103 feet and 6⅝-inch casing was cemented at 2,072 feet at No. 7 Perry. Southern Crude Oil Purchasing Co.'s No. 2 Slaughter, Section 3-17-16, is being swabbed to test sand at 2,088 to 2,107 feet and a derrick has been built for No. 3 Slaughter, NW SW SW. Six-inch casing was cemented at 2,064 feet at Wingfield and associates' No. 3-A Slaughter, Section 9-17-16; No. 4-A is drilling at 1,952 feet and and rig is up for No. 1-B Slaughter, SW NW SW, Section 3-17-16.

Smackover Area

In the Smackover area, Constant Refining Co.'s No. 6 Burns, Section 31-17-15, was completed for a 70-bbl. pumper in sand at 2,213-16 feet. Federal Petroleum Co.'s No. 9-A Lawton, Section 10-16-19, an old well being deepened, was junked and abandoned at 2,505 feet. Imperial Oil & Gas Co.'s No. 12 McClanahan, Section 6-16-15, was completed at 2,549-54 feet making 50 bbls. on the pump. Mazda Oil Corp.'s No. 2-B Lawton, Section 10-16-15, was completed at 2,440-48 feet pumping 50 bbls., 5 per cent salt water, and Peer Oil Co.'s No. 1 Cook, Section 17-16-15, is pumping 300 bbls., 75 per cent salt water, from sand at 2,529-30 feet.

Arkansas Drilling Co.'s No. 1 Rogers, Section 20-17-15, has 500 feet of fluid in the hole from sand at 2,197 to 2,202 feet and is waiting for a standard rig. F. A. Book's No. 1 McDonald, NW cor. Lot 7 NW, Section 1-16-16, is a rig. Broderick & Calvert's No. 7-B Murphy, Section 8-16-15, is drilling at 2,490 feet. G. J. Child's No. 3 fee, Section 8-16-16, is drilling at 2,385 feet. The liner is being set at Clark & Greer's No. 3 Robinson, Section 6-18-15, to test sand at 2,132-45 feet. Sam Cook's No. 8 Tatum, Section 7-16-15, completed last February at 2,401 feet, is being deepened and a short string of 4½-inch casing was cemented at 2,561 feet. Crestline Oil Co.'s No. 1 Telford, Section 34-17-15, bailed dry at 2,212-18 feet and the sand pump is being run. Six-inch casing was cemented at 2,599 feet at Eason and associates' No. 8 Murphy, Section 15-16-15.

A derrick is standing for Eason and associates' No. 9 Murphy, CSL NW NW, Section 15-16-15. Junk was lost at 2,588 feet at Federal Petroleum Co.'s No. 3 H. B. Murphy, Section 15-16-15, and drillers are milling through the casing at 2,575 feet. Garrett and associates' No. 1 Ford, NW SE SE, Section 30-9-14, is a rig. Gaughan & Sifford's No. 1 Parks, Section 28-16-16, is drilling in gumbo at 2,000 feet. Gulf Refining Co. cemented the bottom of the hole at 2,684 feet at No. 17 Alphin, Section 2-16-15, and No. 2 Clawson, Section 14-16-15, is waiting for a standard rig and has 2,000 feet of fluid, 10 per cent salt water, from sand at 2,685-88 feet. Ten-inch casing was cemented at 220 feet at Hollayfield and associates' No. 13 Giller, Section 10-16-15, and the test is drilling ahead at 450 feet. Howell & Knowles' No. 2 Springer, Section 36-17-16, tested salt water in sand at 2,537-41 feet and is shut down for orders. The bottom of the hole at 2,334 feet was cemented at Humble's No. 6-B Flenniken, Section 9-16-15. Humble's No. 2-B Lawton, Section 7-16-15, has 200 feet of fluid, 5 per cent salt water, standing in the hole from sand at 2,635-53 feet and the test is being bailed.

Other Union County Operations

H. L. Hunt's No. 2 Swilley, Section 28-16-16, is drilling at 1,950 feet and a derrick is being built for No. 3 Swilley, SW NW NW, same section. Imperial Oil & Gas Co.'s No. 8 McClanahan, Section 6-16-15, has 700 feet of oil in the hole from sand at 2,548-55 feet and is waiting for a standard rig. Kennebrew and associates' No. 7 Williams, Section 3-16-15, is being plugged back from 1,992 to 1,942 feet. Lion Oil & Refining Co.'s No. 1 Coombs, Section 25-18-16, is drilling in gray lime at 2,390 feet and 6-inch casing was cemented at 2,630 feet at No. 8 Flenniken, Section 10-16-15. Magnolia Petroleum Co.'s No. 4 Tatum, Section 7-16-15, was plugged back from 2,626 feet to 2,035 feet and the casing shot at 2,030 feet. The hole is being swabbed for a test. Magnolia's No. 5 Tatum, same section, is drilling at 2,500 feet and No. 1 Childs, Section 8-16-16, is drilling at 2,000 feet. Mazda Oil Corp.'s No. 6-R Lawton, Section 10-16-15, tested salt water at 2,617 feet and is shut down for orders. McGaha and associates have a rig up to deepen No. 1 Haney, Section 11-17-16, which was dry at 2,536 feet. Junk is being fished out at 2,542 feet at Moco Oil Corp.'s No. 5 Flenniken, Section 5-16-15. Murdock and associates' No. 8 Hays, CSL, Lot 3 NE, Section 5-16-15, is a rig. Moorefield and associates' No. 1 Edwards, Section 2-19-18, is drilling at 2,976 feet.

A derrick is being built for A. H. Ramage's No. 1 fee, NW SW NW. Section 27-16-16. Ramage's No. 6-C Lawton, Section 10-16-15, tested 8,000,000 feet of gas spraying a little oil at 2,609 feet and the casing was perforated from 2,395 to 2,409 feet and the test is waiting for a standard rig. C. L. Saxon's No. 1-B Saxon, Section 9-16-16, found broken sand at 2,313-32 feet with only a light showing of oil. Simms Oil Co.'s No. 2-A H. B. Murphy, Section 15-16-15, is a derrick. Standard Oil Co. is trying to get returns at 2,414 feet at No. 11 McClanahan, Section 6-16-15. Ten-inch casing was cemented at 375 feet at Sunny Jim Oil Co.'s No. 7-A Lawton, Section 10-16-15, and the test is drilling ahead at 2,100 feet. Sun Oil Co.'s No. 9 Brown, Section 8-18-15, is being cored at 2,550 feet. Six-inch casing was cemented at 2,007 feet and the liner is being set to test sand at 2,007-28 feet at Weiss & Simmons' No. 1 McElroy, Section 4-16-16.

Ouachita County

Not a single completion was recorded in Ouachita County last week. However, drilling operations increased. Humble's No. 11-B Arnold, Section 26-15-16, is drilling in sandy shale at 2,742 feet. Magnolia's No. 2 Murphy, Section 30-15-16, is drilling at 2,273 feet. Marine Oil Co.'s No. 8 Hays, Section 4-16-15, is being deepened and a short string of 4½-inch casing was cemented at 2,615 feet.

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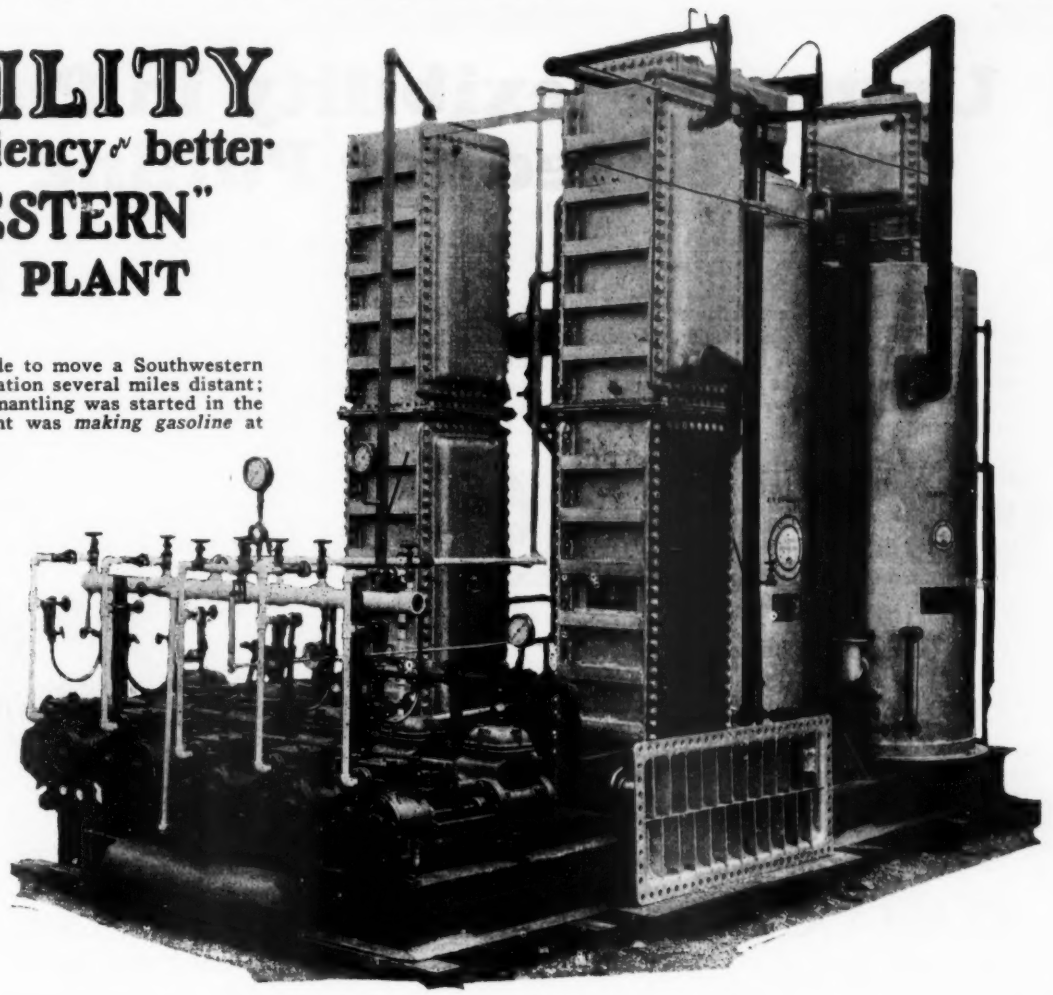

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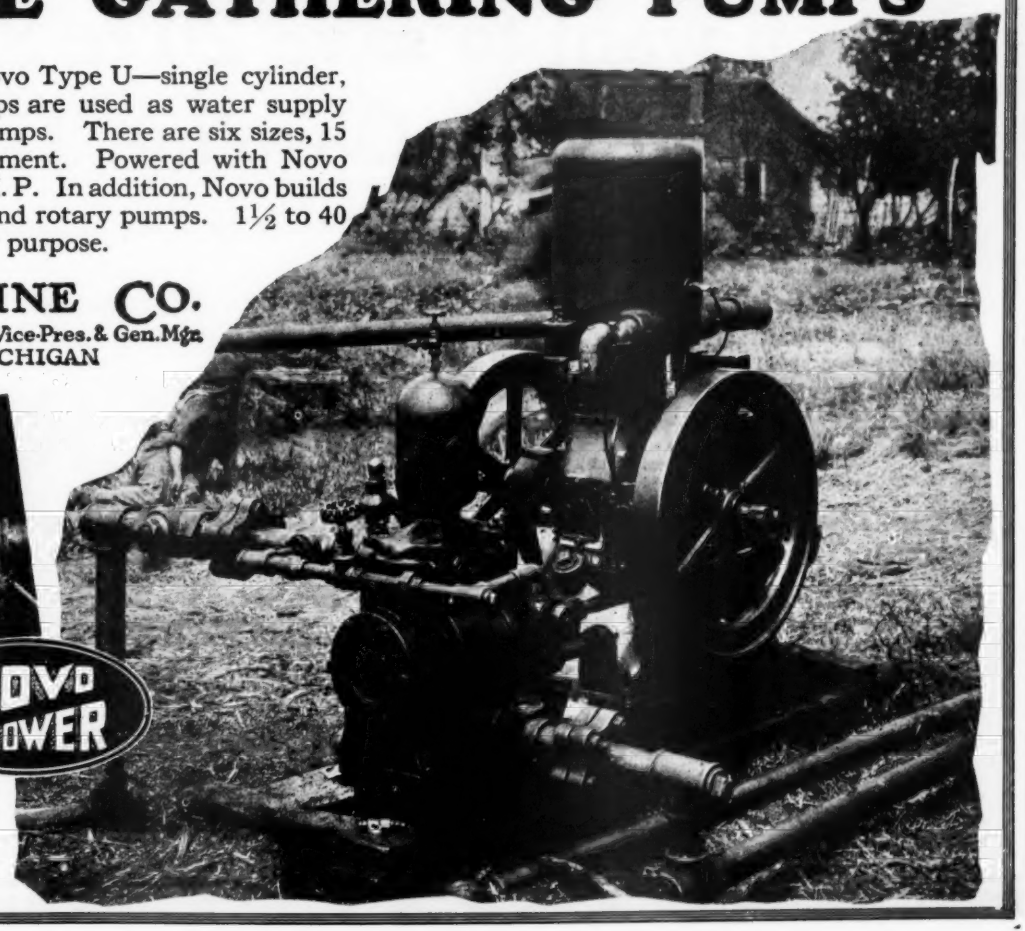

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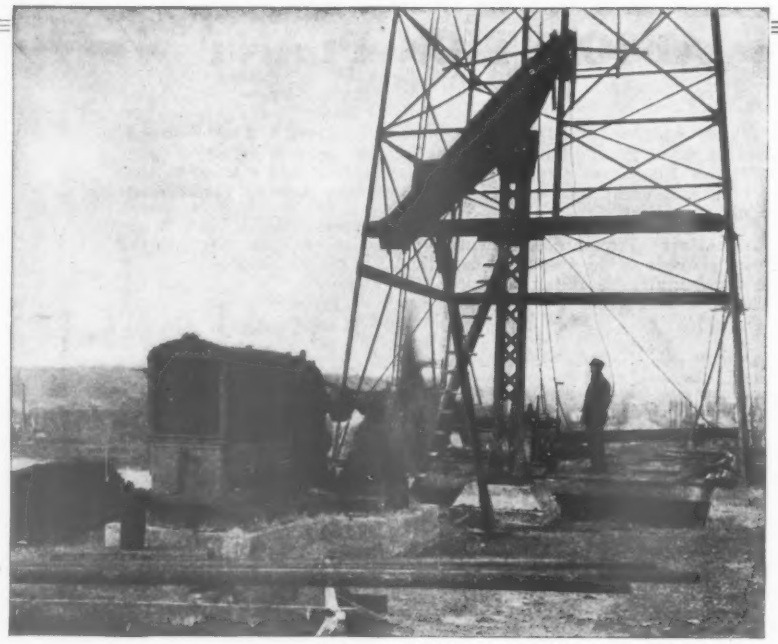

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No. 8 was completed last fall for a 40,000,000-foot gasser at 2,578 feet. Ohio Oil Co.'s No. 8 Goodwin, CSL SW SE. Section 29-15-15, is drilling at 1,250 feet. Phillips Petroleum Co.'s No. 1 Tate, Section 9-14-17, is in 9 feet of sand topped at 1,629 feet, corrected measurement, and has 600 feet of salt water and no oil in the hole. J. D. Reynolds' No. 1 Ratch & Cartier, Section 2-14-18, is drilling at 2,000 feet. Six-inch casing was cemented at 2,632 feet at Simms Oil Co.'s No. 11 Hildebrandt, Section 28-15-15, and the test is in sand at 2,645 feet and is being swabbed.

Six and five-eighths inch casing was cemented at 2,628 feet at Simms' No. 6 T. Murphy, Section 29-15-15. Smith Drilling Co.'s No. 3 Shirey, Section 36-15-17, is drilling at 2,100 feet. Standard Oil Co.'s No. 9 Murphy, Section 29-15-15, is drilling at 1,034 feet. Sun Oil Co.'s No. 6 Hardin, Section 27-15-16, is drilling at 1,745 feet. A short string of 4½-inch casing was cemented at 2,260 feet at Sunny Jim Oil Co.'s No. 1 Hicks, Section 27-15-16. The Texas Company has a rig up for No. 7 Neeley, 1,120 feet north and west, SE NE, Section 27-15-16. Unity Petroleum Co.'s No. 6 Umstead, Section 33-15-15, is coring at 2,422 feet.

Vandiver and associates cemented a short string of 6-inch with a lead seal at 1,635 feet at No. 1 Yarbrough, Section 22-14-17. Woodley Petroleum Co.'s No. 8 Umstead, Section 4-16-15, is being bailed to test 2 feet of sand topped at 2,656 feet. In the Stephens district, Buffalo Oil Co.'s No. 4 Morgan, Section 22-15-19, is drilling in gumbo at 1,500 feet. El Dorado Union Oil Co.'s No. 1 Hall, Section 31-15-19, is being bailed to test broken sand at 2,171-93 feet. Six-inch casing was cemented at 1,529 feet at S. S. Hunter estate's No. 1 Dalton, Section 21-15-19, and the test tested salt water at 1,535 feet, corrected measurement. Louisiana Oil & Refining Corp.'s No. 2 Green, NE cor. NW SE, Section 22-15-19, is a derrick. Six and five-eighths inch casing was cemented at 2,152 feet at Magnolia Petroleum Co.'s No. 2 Watson, Section 31-15-19.

Columbia County

Another small pumper was added to the Stephens Field when J. E. Crosbie's No. 2 Jones-Womack, Section 36-15-20, was completed for a 20-bbl. well at 2,223-28 feet. His No. 3 on that lease is drilling below the 1,800-foot level. Six and five-eighths inch casing was cemented at 2,160 feet at Gorden & Powell's No. 2 Jones, Section 36-15-20. Gorden, Powell & Dickson's No. 3 Jones, Section 36-15-20, is a derrick. Haynesville Trust Co.'s No. 1 Wingfield, Section 18-19-19, is drilling in lime at 2,135 feet. R. W. Aarnes' No. 2 Brown, Section 13-15-20, is standing with 1,200 feet of fluid in the hole, mostly salt water, from 3,327 feet and is shut down for orders. Kentucky-Arkansas Petroleum Co.'s No. 1 Peter Doss, Section 29-19-20, is shut down at 2,340 feet. Scott Phillips' No. 2 Davis, Section 6-18-20-is grinding through rock at 1,100 feet.

Nevada County

Autry Oil Co.'s No. 3 Womack, Section 10-14-21, is being rigged up. Humble Oil & Refining Co.'s No. 4 Bodcau, Section 10-14-21, is being rigged up. Webb and associates' No. 1 Haynie, 150 feet north and east SW cor. SW NE, Section 1-14-21, is a rig.

Scattered Wildcats

In Ashley County, Brown and associates have torn down the derrick and will abandon location for No. 1 fee, Section 33-16-7. Pine Prairie Oil Co.'s No. 1 fee, Section 7-17-15, is drilling at 3,295 feet. In Calhoun County, Southern Crude Oil Producing Co.'s No. 1 Calion Lumber Co., Section 1-16-14, has 4 feet of sand topped at 2,589 feet and 6-inch is being cemented at 84 feet preparatory to test. Haley and associates' Cleveland County test No. 1 Moore, Section 29-9-10, is coring shale at 2,230 feet. Kingland Oil Co.'s No. 1 R. Hall, Section 31-10-10, same county, is a derrick. Three joints of the drilling stem were lost in the hole at 2,350 feet at McClintock & Goodka's No. 1 Olga, Section 35-13-5, Drew County. Six-inch casing was set at 2,758 feet at Arkansas Fuel Oil Co.'s No. 4 Red River, Section 18-19-24, and the plug is being drilled out. Bostic Drilling Co.'s No. 1 Frazier, Section 8-18-24, is being rigged up. A derrick is standing in Little River County for Greason and associates' No. 1 Waldrop, C SW NW, Section 4-13-21. In the same county, Mellick Oil Co.'s No. 1 Hawkins, Section 10-11-31, is drilling at 1,420 feet. Lenze and associates' Miller County test, No. 1 Dale, Section 25-15-26, is drilling below the 2,005-foot level.

ROCKY MOUNTAIN FIELDS

(Continued from Page 48)

County, from the Utah Oil & Refining Co. The carbon firm expects to use the gas from the gasser already drilled at Cisco by the Utah Oil & Refining Co. More wells are to be drilled and a carbon plant will be located about 12 miles from Cisco, close to the wells.

The Utah Oil Development Co. is starting a well on the outskirts of the town of Moab. Cellar is now being dug and drilling will commence in about a week. This well is located on what is termed the Moab anticline.

The Utah State Securities Commission has made a ruling that any oil firm selling stock on leases in that state must file with the commission a complete drilling record of the well and keep the commission agents informed at all times of the formations passed through, also every drilling well must have equipment to make water shutoffs.

Seek Lower Rate

Montana oil men are trying to solve the difficulty in the overproduction at Sunburst by uniting as one body and endeavoring to get a lower freight rate on fuel from Sunburst to Chicago. The Rice Oil Co., Dakota-Montana Oil Co. and other firms have asked the Great Northern Railroad for a flat rate of 40 cents per 100 pounds on car lot shipments from Sunburst Field to Chicago.

According to the company officials, a close investigation revealed that with a 40-cent rate, the companies could ship their oil as fuel oil to Chicago markets and make a little profit, but the railroad so far has made a freight rate of 45 cents per 100 pounds and this is claimed to be too high to show a reasonable profit for the producers.

In case the Sunburst producers could obtain a rate of 40 cents per 100 pounds for fuel oil, the crude could be skimmed to its fuel oil content and the naphthas disposed of locally. The operators consider that the local Montana markets can take care of all this light distillate without trouble.

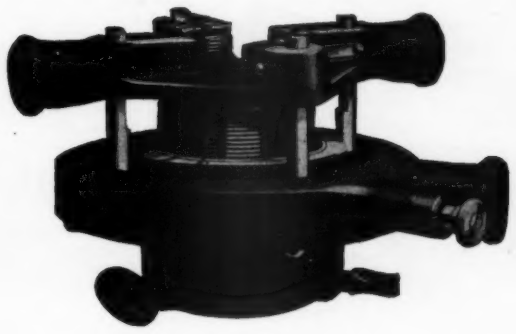
The overproduction in the Sunburst Field seems to have no effect on the drilling of new wells there. At present there are 40 strings of tools running and as it only takes about two weeks to get a well down, a heavy rush of oil is expected about the middle of June. During the past week, seven new wells were brought in, three dry holes and two are doubtful producers. The Fulton Oil Co. brought in a freak well on the Byrne lease, Section 31-35-1. After reaching the Ellis sand at 1,455 feet this well was counted as a very small producer or a dry hole as the hole had only a small quantity of oil. Suddenly the well broke out with a great flow and the crew had trouble shutting it in. No test was made as the well did not have storage to hold the oil but it is estimated at 1,000 bbls. It is thought that the well was drilled close to pay and the rock pressure broken through.

The Dakota Montana had a small producer that was estimated at 10 bbls. and after shooting the well started off at 400 bbls. natural flow. Other wells near are small producers and did not show much increase after a shot.

Plan Four Tests

The Utah Oil & Refining Co. will drill four tests in the Black Mountain Field this summer. The company has four producers in the field at present, shut in, as the field has no pipe line outlet. The production is black oil.

(Continued on Page 145)



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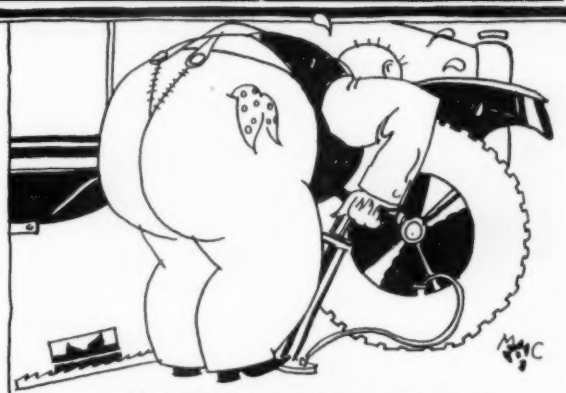

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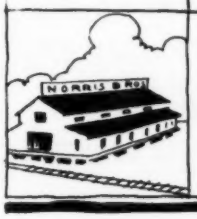

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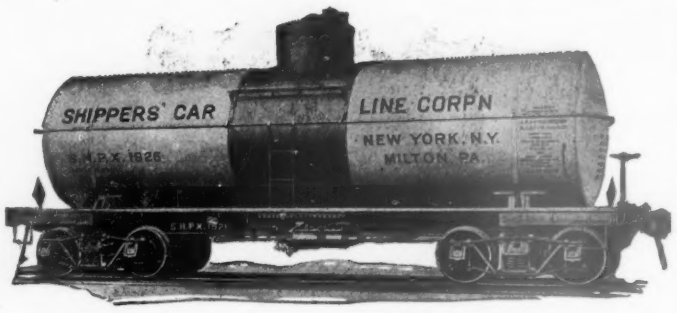

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SOUTHWEST TEXAS

(Continued from Page 54)

west corner of the east half of Block 18, completed the past week, getting the top of the sand at 1,728 feet. It was drilled to 1,738 feet and bailed down to 200 feet of the bottom when the oil rose 600 feet in the hole. It is being drilled slightly deeper; Three Rivers Oil Co. is moving in tools for No. 6 Puig, on Block 76 of the Edgington subdivision of the Puig Brothers ranch. Gibson Oil Co. is ready to bring in its No. 1, in the northwest corner of Block 13.

Carolina-Texas Field

Houston Gulf Gas Co. is drilling at 700 feet in No. 1 de la Garza on Survey 268, in the Carolina-Texas Field. Associated's No. 2-A Webster, in Survey 684, is drilling below 1,150 feet. U. S. Gas & Oil Co. is standing at 2,100 feet. Johnson & DeTray's gasser, on Section 1012, which came in running wild January 26, is still wild. J. H. Winch is coring at 1,960 feet in No. 1 de la Garza, on Block 12, Survey 336.

Webb County Wildcats

O. W. Killam has a derrick up on an 80-acre tract out of the north part of Survey 309 between the Bruni tracts on the north and the old Mirando Valley Pool, in Zapata County, on the south. Magnolia has a location on Block 12 of Survey 132. D. C. Smith has a location in the old Reiser gas field, on Block 19, Survey 1618. Burns & Malone have made a deal to finish the well on Survey 51 on the Coe land, heretofore reported as Sterling and others. The test was standing at 240 feet. O. W. Killam is drilling at 800 feet in No. 1 Driver, on Survey 52, adjoining it. W. C. Ritchison is drilling at 1,872 feet in No. 1 Billings, in Survey 71, northeast of the Carolina-Texas gas field. Benedum & Trees interests are preparing to drill on the Slator ranch, in the Borrego grant, near the Zapata County line.

Zapata County

The Texas Company's No. 2 Jennings, one of the most watched and scouted wells in Southwest Texas, which bailed dry at 4,149 feet last week, was drilled to 4,169 feet where it went through a cap rock and a few inches into a sand. It was bailed down 1,400 feet and came in a small gas well, probably 5,000,000 to 15,000,000 feet. The intention is to gauge it and drill a little deeper and bring it in again. Many oil men are confident that deep drilling will disclose some deep oil in the Mirando Field and this well is especially watched on that account. No. 2 Jennings, it will be remembered, came in last year at 3,965 feet making a big volume of gas and resulting in the death of the driller and injury to some of the men.

Earl K. Bateman is preparing to drill on Block 7, of Survey 617. Trees Oil Co. has contracted with O'Hern & Putnam for a 3,000-foot test in Zapata, in the Casa Blanco Survey of the Villa grant, which is a few miles to the south of The Texas Company's test on the Jennings. Magnolia is rigging up for a test on the Cuellar land in Survey 278. Rollin V. Hill is preparing to deepen his test in the southeast corner of the Villa grant from 1,761 feet. Maurer & Duggan, at 1,466 feet in No. 1 Cuellar, in Survey 244, tested dry and have abandoned it. Jerkins & Hill's No. 1 Yeager-Strohman, on Survey 258, in the northeast corner of Zapata County, got a little gas and it turned to salt water at 2,012 feet. Cullinan & Clark have a sand at 1,493 feet in No. 1 Hinnant, Block 9 of Survey 10.

Jim Hogg County

Magnolia Petroleum Co. is moving tools to No. 5 Merchants State Bank, on Survey 267, in the Randado Field, 300 feet north of the No. 4. Nos. 1, 2, and 3 are on Survey 416, south of the Randado Field. No. 4 came in a big gasser recently. Magnolia has the derrick up for No. 3 Palacious, on Block 10 of Survey 291, in the Randado Field. Wheelock & Collins are starting to drill their No. 1, in Block 21 of Survey 291. Simms Oil Co. has the derrick up for No. 1 Weil, off to the north of the field, on Survey 81. Simms Co.'s No. 2 Palacious, in the northwest quarter of Survey 291, completed recently as a gasser, but making 100 bbls. or more of oil, has been turned into the Humble's pipe line from the field. Simms has set casing in its No. 3 Palacious in the southeast corner of the northwest quarter of Survey 291. Andrews Petroleum Co. is on bottom at 2,308 feet in its No. 1 Merchant State Bank, in Survey 267, a half mile to the northwest of the Randado discovery well and has begun to make new hole. Houston Gulf Gas Co.'s No. 5 Palacious, on Block 14 of Survey 291, is on the pump and making 140 bbls. of oil at 1,279 feet, total depth. Casing was set at 1,276 feet. Its No. 6 Palacious, on Block 20, of Survey 291, is drilling below 800 feet. No. 7, on Block 11 of Survey 291, has spudded in. No. 8, on Block 11 of Survey 291, has spudded in. No. 9, on Block 11 of Survey 291, is a derrick. Morgan Oil Corp., on Block 12 of Survey 291, a little to the northwest of the discovery well and in the line of the Simms and Magnolia gas wells, got considerable gas and is making some oil. American Well & Prospecting Co.'s No. 3 Palacious, on Block 15 of Survey 291, that was standing for some time had been completed and is pumping about 100 bbls. a day. The well of Black, Pearson & Hudson of Corsicana, was brought in at 1,261 feet and made considerable gas and 100 or more barrels of oil. It has been deepened to 1,275 feet and will be tested again. Two or three more rigs are running in the field at this time than last week but the bulk of the new rigs are moving in. Oil men report the roads thick with trucks moving in rigs. One auto load of oil men was held up along side of the road for 30 minutes while truck loads of drilling rigs were passing. Roads are badly cut up with the heavy trucks. With all rigs accounted for there will be 22 in the field and either running or changing to new locations within another week.

Henne, Winch & Fariss Field

Kitselman & St. Albans' No. 32 Holbien, in Block 2 of Survey 15, of the Holbien ranch, came in last week an oil well good for 500 bbls. intial production. No. 33, on Block 30 of Section 12, is drilling deeper. No. 34 has been completed and is a 15,000,000-foot gasser on Block 11 of Survey 11. No. 3 T. P. Holbien is on the sand at 2,078 feet. Crown Central's No. 1 Holbien, on Block 23 of Section 12, is drilling at 1,800 feet. Associated's No. 2 Lopez, on Block 21 of Share No. 1 of the Las Animas grant, is drilling at a few hundred feet.

Jim Hogg Wildcats

Murchison & Fain are drilling at 2,274 feet in No. 1 Yeager, on Survey 452, in the northwest corner of Jim Hogg County. It is a test in which a number of big companies hold protective acreage. Benedum & Trees' No. 1 Allen, on the Wilbur Allen ranch, is standing at 2,800 feet. No. 3 Allen is drilling at 1,500 feet. Simms Co.'s No. 1 Leyendecker, in Block 7 of Survey 143, is drilling at 800 feet. L. M. Holden's No. 1 Jones, east of Hebbronville, is changing to a rotary rig from standard on the strength of a showing of oil at around 2,855 feet.

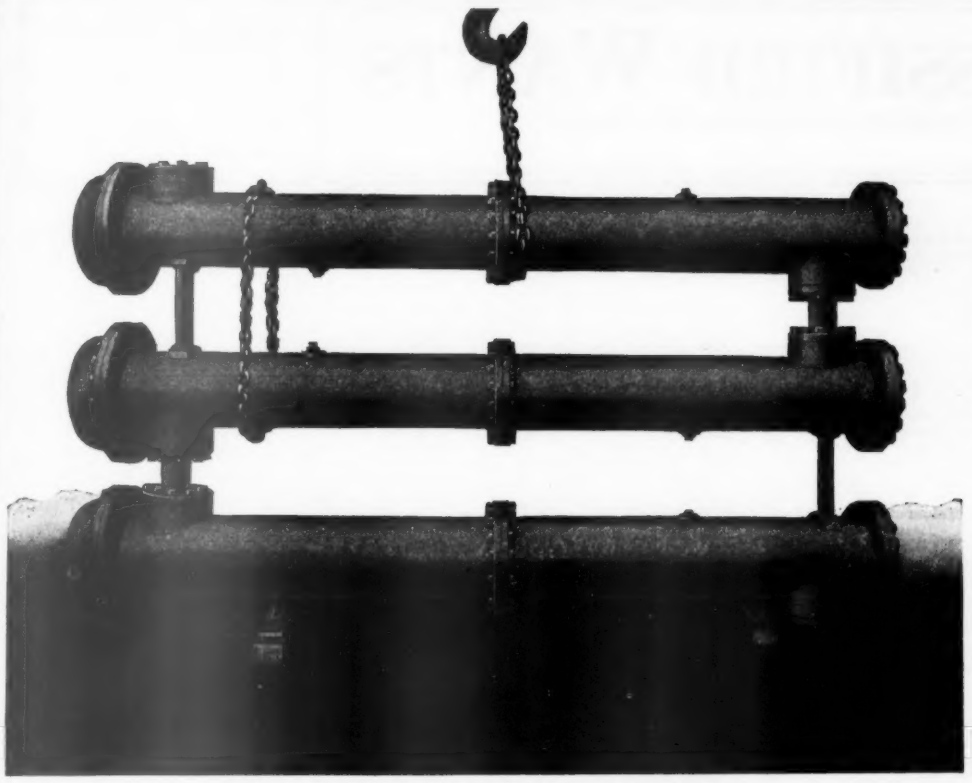
Jim Wells County

Benedum & Trees set casing at 2,290 feet in No. 1 Gallagher, in Jim Wells County, and tested salt water and are drilling deeper.

Bexar County

Marland Oil Co. is setting casing at about 1,700 feet in its No. 1 Milhalski, in eastern Bexar County, and will make a test of the Edwards which was topped at 1,638 feet. Location for this test was made after the most extensive diamond core drilling of any lease block in southwest Texas. The log of the well is compared with the Transcontinental well drilled 2 miles south a few years ago, which got the top of the Edwards at 2,065 feet, and the J. M. Davis well on the Koch farm, a little to the northeast which got the top of the Edwards at 1,880 feet. Marland is setting 8¼-inch casing and if the Edwards fails to produce will carry the well down to the Glenrose and will continue to attract close

(Continued on Page 145)



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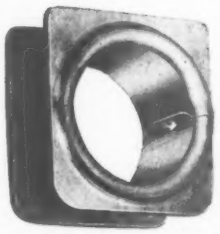

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FOR QUICK ACTION will lease whole or part of 140 acres near Weleetka, Okfuskee County, Oklahoma; surrounded by some of the best oil structures in the State. Dr. E. J. Angle, 407 Funke Bldg., Lincoln, Nebr.

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THE NEWBLOCK OIL CO., F. Julius Fohs, president, have just spudded in a deep test on what is known as Carlos Dome in Grimes County, close to where the big gasser was struck about a year ago, spraying oil. We are now offering some good close-in stuff very reasonable. Address D. J. Reynolds, Box 851, Navasota, Tex.

HAVE BUYERS for flush or settled production in Oklahoma and North Texas. Vern R. Hartman, P. O. Box 442, Dallas, Tex.

FOR SALE—Leases, production and royalties in Barren County, Kentucky. Shallow drilling, high gravity oil, long life wells. Have some leases adjoining production. Small rentals. L. W. Preston, Glasgow, Ky.

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HUMBLE OIL & REFINING CO.'S big drilling block with well now drilling below 800 feet. My acreage is located in southern Reeves County, Texas, in the big San Martine structure, and adjoins the drilling block of the Humble Oil & Refining Co., who are now drilling below 800 feet. My acreage is as close as any one has been able to play to this well. In order to obtain new clients I am offering part of my holding in tracts of 10 acres and up at $4 an acre. Write for full information and my Free map drawn true to scale showing the exact location of the holdings of the major companies, and my acreage.
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Central Natl. Bank Bldg., St. Louis, Mo.
Reference: Page Bank, St. Louis.

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LEASES—PRODUCTION

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16-32nd INTERESTS in 800-foot well and 40-acre lease for sale at $75 each. Also three 40-acre offsets for sale. Box 800, Muskogee, Okla.

SETTLED production and drilling propositions. R. E. Cope, Bowling Green, Ky.

OIL LEASES—In Dallam and Hartley Counties, where the "Big Play" is now on; 88 form, 10-year leases in tracts of 80 acres up. Prices from $1.25 per acre up. Write or wire W. H. Lathem, Dalhart, Tex.

PRODUCTION FOR SALE
I have for sale from 5 to 20 bbls. production in Warren County, Kentucky, at prices ranging from $1,000 to $1,250 per barrel. The present price of Warren County crude is $2.30 per barrel. Write for description of properties. Send $1 for map of Warren or Barren County. Address Box 553, Bowling Green, Ky.

WOULD like to hear from parties wishing to invest in Oklahoma. Wildcat leases and royalties. W. H. Adams & Co., 203 Clinton Bldg., Tulsa, Okla.

HAVE SEVERAL pieces of flush and settled production for sale in Oklahoma and Wichita Falls districts. Prices reasonable and terms can be arranged if necessary. P. O. Box 1144, Dallas, Tex.

HARTMAN & SARGENT — Leases, royalties, production, bought and sold, Dept. A. Geological and property management, Dept. B. You'll like our service. Office, Lawrenceville, Ill.

FOR SALE — Leases, production and partly developed leases. On account of shallow drilling, low cost of equipping, small operating cost, high gravity oil and long life production, Kentucky offers the best opportunity for the small investor. We have for sale producing properties with 2 to 100 bbls. daily production and large undeveloped acreage with proven locations to drill. Address W. P. Harley, Bowling Green, Ky.

WRITE for my state of Texas oil map free. Oil leases exclusively. Reference Mercantile Agencies.
C. W. WEBSTER
W. T. Waggoner Bldg.
Fort Worth, Tex.

WILL LEASE block for well in line of production. Butler County, Kans. Write D. A. Bisagno, Augusta, Kans.

HARTLEY COUNTY leases. M. F. Beaumont, Hartley, Texas.

TEN-YEAR oil leases. No rentals. Crockett County, Texas. Send for true map. Paul Konz, Box 291, Fort Worth, Tex.

FORT SMITH THROUGH
10,000 acres, good structure and geology. Will sell or consider drilling contract. J. F. Dreisbach, 512 Central Ave., Hot Springs, Ark.

FOR SALE—Small production, good equipment. Opportunity knocks. Write P. O. Box 185, Springfield, Tenn.

Through the Classified Wants Section you can interest 25,000 oil men in your product or want. Mail your advertisement now for next week's issue. It doesn't cost much.

ROYALTIES—PRODUCTION

ROYALTIES
Producing royalties wanted in Okla. Give lowest price and all details. Box B-311, The Oil and Gas Journal, Tulsa, Okla.

FOR SALE—Undivided 1/64th royalty interests in wells drilling and to be drilled in Shackelford and Callahan Counties, Tex. One hundred sixty acres checkerboarded. Bottom hole money and placed in bank until wells finished. Good geology. Good titles. Form 88 leases. Depth 1,500 feet. Price $187.50 each interest. One or more. Allen Buell, Jr., Grace Hotel, Abilene, Tex. References, Citizens National Bank, Abilene, Tex.

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Worthy of your confidence. General machine work. 1416 Walnut, Kansas City, Mo. Phone Harrison 7660.

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1-in. to 12in. Also complete drilling rigs. We are also in the market for pipe of any size or quantity.
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Two 12x6x14 "National" single acting steam pumps. Also smaller pumps of the same make.
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Four steam-driven Westinghouse Air Compressors.
This equipment is in good condition and priced right. For further particulars address
DEVONIAN OIL CO.
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FOR SALE—Star No. 28 drilling machine in extra good condition, tools and equipment first class shape, new cable, 700 feet 6⅝ casing, new; real bargain for quick sale. Phone or write Bonner Springs Gas Co., Bonner Springs, Kans.

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Three 27 Stars with 28-h.p. McNamara Boilers, steel in good shape. Also one 4½-inch Parkersburg machine with 28-h.p. Mounted O.W.S. Boilers. Steel from 16-inch bits to 5-inch. Will give complete list of tools on application. Mid-Egypt Gas & Oil Co., Ava, Ill.

FOR SALE—One 25-h.p. Reid gas engine, also one 16-foot bandwheel power, rebuilt in shop, like new, at half the cost. Call 3-3083 or 2-3447. G. W. Darling, Box 488, Tulsa, Okla.

STAR 28, complete with tools, will be sold on Wednesday, June 9, at 2 o'clock p. m. on the Dobson farm, 4 miles southwest of Jefferson, Kans., same to be sold for cash. Bank of Chelsea, Chelsea, Okla.

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Fully equipped machine shop for oil country work, including buildings, 26 Bridgeford tool lathe, shaper, drill press, steam hammer, boiler, oil engine, No. 12 pipe machine, necessary cranes and small tools. Equipment new when installed at Gridley, Kan., 1923. For sale on account of ill health. For further information communicate with the Western Drill Tool & Supply Co., Chanute, Kan. Phone 480.

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35,000 feet 2½-inch
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75,000 feet 4 -inch
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Two miles 60-pound first-quality relaying rails.
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POSITION WANTED

CHEMICAL ENGINEER (petroleum technologist) graduate or recognized university, wishes position as chief chemist or assistant superintendent in petroleum refinery. Seven years' experience, involving work in all refinery departments. Especially trained in refining of cracked gasoline and lub oils. Excellent references. Box B-324, The Oil and Gas Journal, Tulsa, Okla.

EXECUTIVE, accountant, auditor, age 39, now employed as secretary-treasurer well-known local oil company, desires to make a similar connection with individual or company, thoroughly experienced in tax matters, accounting, office management and executive work, highest local references. For interview address, Box B-325, The Oil and Gas Journal, Tulsa, Okla.

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Have just completed installing very comprehensive program, in four refineries of one of largest and oldest refining organizations in U. S., for reducing process costs and increasing production. Can be available about July 1 for above position. Consulting and manufacturing experience in cutting costs, boosting yields and production, process development and assisting in financing in Mid-Continent, Atlantic Seaboard, Pennsylvania and Mexican districts. Will also consider a new project, offering sufficient participation, after careful analysis. Box B-320, The Oil and Gas Journal, Tulsa, Okla.

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HELP WANTED

WANTED—Petroleum engineers and experienced refinery draftsmen with large oil corporation located at New Orleans. Answer giving training, practical experience, age and salary expected. Box B-317, The Oil and Gas Journal, Tulsa, Okla.

WANTED—Mechanical draftsman, experienced in heavy machinery and general shop drawing and designing, by Oil Well Tool Manufacturing Concern. Must be high-class man and have best references. Box B-310, The Oil and Gas Journal, Tulsa, Okla.

WANTED—Specialty salesman who is now selling to field superintends and supply companies. We want representation in Texas. Some one needing a good fill-in line should write. We build a line of surface equipment such as powers, casingheads, stuffing boxes, beam hangers, elevators, sucker rod hooks, etc. When writing state line you are now selling. Box B-301, The Oil and Gas Journal, Tulsa, Okla.

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The OIL and GAS JOURNAL
TULSA, OKLA.

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PATENT-SENSE — Valuable book (free) for inventors seeking largest deserved profits. References include prominent oil men. Write Lacey & Lacey, 718 F. St., Washington, D. C. Established 1869.

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Results sure, swift, economical. Employ the One Great Plan—the plan that gets money. Avoid abortive "mail order" and "phony" broker schemes. Describe proposition. Hansel Financing Specialists, 212-GE Earlham St., Pittsburgh, Pa.

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SEE THE WONDERLAND, sweet smelling pines; sparkling lakes; good fishing; cool nights; good water. Furnished cottages $15 and $20 per week. Lady of the Lake Resort, Park Rapids, Minn.

COLE'S POINT CAMP invites you to vacation where the air is cool and bracing. Fishing, best you can find for Muskellunge, Pike and Bass. Tulsa folks are our neighbors. Come early. Mrs. Janet MacDonald Cole, Fifield, Wis.

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Situated on Wild Horse Island, consisting of 4,200 acres in beautiful Flathead Lake. Nature's wonderland. Marvelous grouping of beauty and rugged grandeur.
Enjoy Montana's summer, long pleasant days and cool, refreshing nights. No mosquitos, or other insects. Positive protection against hay fever.
Write to Clara I. Edgington, Hiawatha Lodge, Dayton, Mont., for free literature, including beautiful illustrated booklet.

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An experienced dependable broker with following is prepared to give personal attention to the financing of a worthwhile proposition. Address B. W., 810 Broad St., Newark, N. J.

DEVELOP YOUR OIL PROPERTIES
Sell stock, units or leases quickly, economically. Square shooters only need give details; 25 years' experience behind plan. Northcliff, 28 W. 44th, St., New York, N. Y.

BUSINESS OPPORTUNITY

FOR SALE—Wholesale oil and gasoline business, including one of the finest compounding plants in the United States, located in heart of Mid-Continent Field. Also filling station in center of prosperous city of approximately 14,000 people.
The plant is located on three railroads, consists of about 4 acres, large brick fireproof buildings, over 125,000 gallons storage capacity. Business making over 20 per cent net. Owner will sacrifice on account of ill health. Write Box B-316, The Oil and Gas Journal, Tulsa, Okla.

AN ESTABLISHED COMPANY desires to hear from parties who have patents or patentable ideas applicable to refinery construction or operation. We are in position to finance and develop and to exploit the sale and manufacture of desirable equipment or processes. Write Box B-302, The Oil and Gas Journal, Tulsa, Okla.

THE SMALL SUM that it costs to insert an advertisement in the Classified Section of The Oil and Gas Journal enables you to place your desires in the minds of men who are always interested in a good proposition.

WABASH DRILLING CO., solicits your work. We maintain 10 strings of cable tools and will furnish estimates on work in any cable tool country. Bring on your wildcats. Wabash Drilling Co., office, Lawrenceville, Ill.

WANTED

WANTED—Three or four cylinder rigs, preferably equipped with drill stem and make and break or double deck rotaries. Would like to locate Shell Goodwin, Shelly White, Frank Baquett, Jesse Reese, Puss Adams or Lew Williams. Will receive mail during June at Burkburnett, Tex., or at Box 72, Pasadena, Calif. D. O. Credille.

WANTED, HIGH GRADE OIL PROPOSITION TO FIANANCE by party who brought out Wall Street's greatest success. J. Myron Murphy, 50 Broad St., New York City.

WANTED to get in touch immediately with responsible company that can start test well within 60 days on large tract in Florida. Have special information and report from oil expert on this acreage. Ray W. Johnson, Bartow, Fla.

WANTED — Gas for gasoline plants. Entire capital furnished. Liberal inducements to gas owners. We are pioneers in the business. Tower Gasoline Co., Mercantile Bldg., Oklahoma City, Okla.

WANTED—Producing royalties Oklahoma and Kansas. Give full details. P. O. Box 502, Independence, Kans.

ADDRESSES WANTED

PLEASE HELP ME to find my son, Everett Hampton, who on January 15 left Roswell, New Mexico, to go to Artesia. He worked for the Union Oil Co. in California before going to New Mexico. Any information concerning his whereabouts will be sincerely appreciated. Mrs Mona Hampton, 822 Paseo St., Kansas City, Mo.

XUM

Firm Undertone Marks Chicago Market

Expectation of Another Tankwagon Advance Early in June. Gradually Strengthening Market Is Looked For

By J. B. Waldo

CHICAGO, May 29.—One of the noticeable features of the market for all petroleum products during the past week, has been the firm undertone that has ruled. Gasoline has firmed up in spite of the offerings of gasoline bought for delivery this month in considerable quantities. This had to be moved but the price concessions have not been important. Kerosene, although the season of active demand is past, has only declined slightly and is not weak in tone and all the fuel oils from distillate down to the heavy fuel oils are showing a rather surprising amount of strength considering the season and the attitude of buyers. Not in all cases has the demand been active but there has been little pressure to sell and primary sources of supply have shown firmness right through the week.

There were, early in the week, numerous hurry-up calls for gasoline and cars rolling shipped before May 24 were in demand to replenish the supplies of motor fuel for Memorial Day, while later in the week jobbers were ordering in the spot market supplies to reach them early next week to replenish their tanks after the holiday.

The good demand caused much of the gasoline that was due on contract to be shipped before the close of the month, to find sellers at the market price which has remained about steady at 12 cents with a few sales reported, chiefly earlier in the week at 11¾ cents. Occasional sales were made by refiners who are holding for the 12¼-cent price for the Navy grade at that price. Some market letters sent out quoted 12¼ cents for the Navy grade and 11¾ cents for the 56 gravity, but the senders reported that they brought them no orders for the higher priced, although some sales were made of the 56-58 450 quality. The demand for this is increasing as the weather is warmer and the price of the Navy gasoline is higher. Several marketers estimated the sale of the 56-58 450 endpoint at 7 out of every 10 cars sold. Some refiners are still delivering the Navy grade on their marginal contracts, while others are delivering the 56-58 450 gasoline.

Spread Narrowed

The spread in prices between the various gravities has narrowed until price lists in some cases show a total spread of but 1¼ cents between the 56-58 450 and the 64-66 375 gasolines. The demand for the higher gravities is light and they are receiving little support from explorers so far as can be learned. Various rumors have been floated of large export sales but they have not been verified. In one instance a report made by the sales department of a refining company of a sale of 5,000,000 gallons was promptly spiked by the management stating it did not nor would not have any such quantity of the gravity mentioned. Some continue to blame the quiet condition of the higher gravities on the appearance on the market of the so-called "new" gasoline, at the regular station price for Navy.

The first excitement regarding the advent of this gasoline has passed but there is still much conjecture regarding its effect on the jobbing trade and especially on the companies which have built up a large gallonage on the sale of a higher test gasoline than the regular grades at a higher price. Tests made by refiners and chemists seem to prove that the new gasoline is simply a treated gasoline having the gravity, initial and endpoint of a 64-66 400 gasoline. The reports of results obtained by its uses also vary. Some claim they get a better mileage while others assert they get less with the Navy grade. Most admit that the starting and acceleration are better but this is of little moment at this season. The great claim is that it is a better gasoline sold at the same price as the regular grade and in some respects at least the claim can be justified. It is primarily a pleasure car fuel for the heavy truck engine requires a fuel with considerable of the heavier ends.

Sales in Advance

The same question arises at the opening of June as at the beginning of May, regarding the quantity of gasoline that has been purchased by marketers for delivery over all or a part of the month. Several of the larger refiners are endeavoring to make a rule that sales in advance shall be over 10 days only, the idea being in part that it will make for a more active market if the buyers, over a period are compelled to come into the market for supplies three times instead of once or twice a month as at present. It would also make for a closer control of the price situation by the sellers who would not contract for 30 days and then be sorry, as has happened several times during the past few weeks. Apparently there has been considerable purchasing of gasoline for delivery over June at prices ranging from 11¾ to 12 cents, some having more and some less but quite a quantity as a whole. Marketers when asked are not very communicative but statements made show they have been buying. At the opening of May the same was true. It was thought there was little gasoline owned for delivery during that month but as it proved there was sufficient to have quite an effect on the price situation, although the buying has been fairly good all through the month. Right now there is an expectation of another tankwagon advance early in June and if this is true as seems possible at least, this will be cheap gasoline, even if the advance is split between the refiner and the marketer. Without a tankwagon advance the outlook is for a gradually strengthening market and 12½ cents for Navy by the fifteenth is believed to be most likely if the weather is at all favorable over the territory.

Kerosene Declines

Kerosene has declined a little in price but less than would be the case under usual conditions with such a falling off in the demand. Shipments have been very largely on old orders and new business limited. One of the large refiners was still delivering quite freely but the new business was only a car a day on most days of the week. Others reported daily sales of a car or two but the rush is over and quotations to the trade have dropped a quarter of a cent, which is, however, just about the amount of the decline in quotations by refiners. For the 41-43 gravity the usual quotation is 10 cents by those who want the busines with 10¼ cents asked by some refiners who have little or nothing to sell. A prominent oil man stated this week there was a prospect of an increased demand from the adoption of kerosene engines by some trucks intended for hauling heavy loads. He stated that in his part of the country there were quite a number of these trucks operating successfully and he believed the kerosene truck motor had come to stay for certain uses.

Furnace Oil

Furnace oil is still being generally discussed. At the last meeting of the petroleum luncheon club the distributors were so blue as the results of statements made by some of the refinery men present that as they left the dining room one oil man said that all they needed was some crepe and flowers to make a first class funeral. There are many who do not believe the situation is really so bad but that when the time comes there will be plenty of furnace oil, perhaps not as good in some respects as that sold the distributor last season but still of good quality and at a price which will not seriously deter the use or sale of domestic oil burners. Many of the oil men believe it will be a good thing for the burner industry if it is forced by the higher cost of burner oil to market its oil burners as what they really are—not the cheapest means of heating but as giving more for the money. Some ask if any buyer of an auto was every stopped from purchasing a car by the cost of gasoline. Perhaps as good an example as any is the way in which the electric light has supplanted gas for lighting. Who would go back to gas for lighting to save the small sum that could be made from a change back to gas? There is one reason that precludes such a change and that is the more healthful condition in the home that result from the use of electricity. The same reason applies to the use of the domestic oil burner. One prominent oil man stated that he had sold and continued to sell his customers when furnace oil was 16 cents a gallon and he argues that the man who puts in a domestic oil burner does so today not on the argument that oil will cost him less than coal, but that for the little extra cost there will be added a comfort and convenience that cannot be had when coal is burned in the furnace. The demand for distillate is still felt but the amount sold is small. The price is quite firm owing to the attitude of refiners who are willing to hold what they may have or make, for next fall. It will be needed then and almost certainly will command full prices.

Gas Oil

Gas oil, that is cracked gas oil, is just a little lower in price to buy. There is little of the straightrun variety offered, none in any quantity, and the price is so high by comparison that practically all the business that is being done is in cracked oil. Several refiners with cracking stills have withdrawn this product as they are re-running it in their charges for their crackers. Some inquiry has been made as to quantity purchases but the price is not attractive when the oil may not be used until next September at earliest. There is a fair industrial demand and some oil is being used to bring up the gravity of the fuel oil that is being sold today. The market is around 4 cents for cracked gas oil, some being offered for resale at 3⅞ cents, and possibly a little at 3¾ cents, but not regularly.

Fuel Oil Firmly Held

Fuel oil continues to be firmly held. The bulk of the offerings are from the cracking stills and the gravity is low. Several of the larger refiners now have nothing to sell but 16-18 gravity oil and a good deal of even lower gravity is being offered. Some sales of fuel oil stated to be of 14 gravity were made by one of the local refiners this week at around $1.15. It is claimed for this oil that it is free flowing under present conditions. There is little demand for the higher gravities as the users will not pay what amounts to a premium for the lighter oil and they do not need as light oil as in colder weather. Buyers generally are placing orders for just as small quantities as their requirements will permit them to do and rather discommoding themselves to avoid ordering more than they must have. They talk that present prices are prohibitive and that they will be forced back to coal unless they can place their business at lower rates. But they are buying what they must have and paying what seems very good prices. Several sales offices report considerable sales of 16-18 gravity oil at $1.25 in buyers' cars. They insist on the buyer sending for the oil and probably are cleaning their own cars to get them ready for use in making deliveries of gasoline. They will probably be needed. If the sale of gasoline is one-fifth larger than a year ago it will mean that six cars will be required where five answered last year. Some may use more coal than they have been doing. Some figure that at the present price of coal the most that they can pay for oil is $1.20, but there are industries in which they could afford to pay $2 a barrel for oil with coal at its present price. In fact they will have oil so long as it is to be had. The seaboard may get some relief in its bunker fuel costs from the output of the Venezuelan and Colombian fields which are growing in importance as producers almost daily. This might ultimately result in a lessened demand for Mid-Continent crude but so long as the demand for gasoline continues to grow with each season, there seems little prospect of lower prices for fuel oils. Many of the marketers do not look for any real decline in fuel oil, just a little easing off perhaps during the summer months. Several have said they did not expect to be able to sell a good refinery fuel oil during the season at less than $1.10 to $1.15. The Smackover product is now firm at $1.20 that it ceases to be a menace to the price of refinery oil. There is a little oil or has been until very recently that could be sold at $1.15, but right now the price is at least $1.20, with some asking $1.25.

Lubs Move Freely

Lubricating oils are moving freely to the jobbers and compounders on contracts and the station business is good. Prices are firm. Neutrals have been advanced in the East and are firmly held here. The industrial demand is good. The report of a national advertising association regarding substitution of inferior grades for advertised brands is regarded with little interest here as many of the oil men state the condition is not new. It is pointed out that the greater number of those who are stated to resort to this practice to increase their profits are the garage owners rather than the oil men. Reliable oil companies do not substitute. Many prefer to sell their own brands but the product is fully equal to the product put out by makers of the advertised brand. Another point made by oil men is the advertising of lubricating oils and motor fuels, by inference at least, as Pennsylvania oils. There are oil companies that trade under the name of the Keystone state that seldom if ever have a gallon of the product of the real Pennsylvania crude in their tanks.

Tankwagon Markets

Tankwagon markets in this territory have not been changed. There is a general feeling that there is an advance coming of another cent some time during June and that the demand for gasoline will justify the advance even if there is no further change in crude prices. Many expect to see the local prices advanced 1 cent to 20 cents tankwagon, and 22 cents service station, and believe these prices will be the top. Gallonage generally during May has been good and it is expected that when the final reports are made up they will show a substantial increase over last May. Locally, price conditions are still unsettled and the average oil man seems to regard the tankwagon quotations as only a basis upon which to base reductions. The present tankwagon price is 19 cents, but there is a quantity discount of 1 cent per gal-

lon for dumps of 100 gallons or over and many distributors regard 18 cents as the real tankwagon price. The Q. D. A. is based on this price and it is possible for a large buyer to secure a rebate at the end of the month of 2 cents a gallon so that the price to buyers will be 16 cents net per gallon. In addition to these discounts, a garage or station owner who sends his own trucks to the bulk station of any of the large local companies receives an allowance which is regularly 1 cent per gallon, but which independent dealers claim is sometimes doubled or tripled. The larger companies claim there is no paying of extra rebates but that they adhere strictly to the discounts named. The independent dealer obviously has more or less difficulty in determining just what price the buyer is entitled to as he has to take the buyer's word as to the amount of the rebate received and of course the independent is expected to go the regular companies a little better, if he wants the business. On the basis of 12 cents Group 3 for Navy or even 11¾ cents for the 56 gravity with 2.38 cents freight added there is little profit for the independent dealer in the present local tankwagon prices subjected to the full discount sale. The larger companies state they have no contracts with groups of customers, trade associations or organizations of professional men but they do make contracts with large consumers for their requirements over the entire territory which obliges the local distributor to meet prices based on bulk sales to organizations which may total their purchases over the entire territory for the purpose of receiving their discount. The local sales of some of these organizations are comparatively small but their country consumption is so large that they receive the largest discount for quantity purchased. In Wisconsin, the discount may be based on purchases made within a given city or town, it was even suggested that the discount be based on purchases at a given station. There is the other side to this discount business and that is that the independent dealer who buys, say 5,000,000 gallons a year of gasoline which he has shipped to and distributes through 20 stations contracts with his refiner on the basis of the total amount purchased, not on the deliveries to each station. There always seems to be not one or two but many sides to every oil problem.

CONTINUED FIRM TREND IN EAST; DEMAND FOR HIGH TEST PRODUCT

By N. O. Fanning

New York Bureau, The Oil and Gas Journal, Room 543, 30 Church St., New York

NEW YORK, May 29.—The refined oil markets maintained a continued firm trend during the past week. On Monday, May 24, the Standard Oil Co. of New York advanced its tankwagon price throughout its territory to 21 cents a gallon. The same day the Standard Oil Co. of New Jersey raised export gasoline one-half cent, making New Navy in cases 29.40 cents a gallon. Two days later the Atlantic Refining Co. advanced tankwagon prices in its territory.

The gasoline situation seems to be good, with stocks apparently in strong hands. Bulk gasoline in tank car lots is difficult to get, except at considerably advanced prices 38-60 bringing 15 cents at refinery, while 64-66 cannot be had for less than 17 cents. Few refiners are offering tank car gasoline at present, and the tank car offerings from the Mid-Continent are also scarce.

At the same time the price situation at service stations in and about the larger cities seems to be mixed, according to the best reports. Liberal concessions are being made in many directions by service station dealers, who, it is believed, are obtaining concessions themselves. Competion is as keen as ever, if not even more so, with the opening up of new stations going on apace. That there is a shortage of gasoline seems unthinkable in view of the current service station situation, both as to number of stations and prices quoted.

It must be admitted that many of the new service stations are being put up by the large refining companies, and therefore do not represent such a big competitive force, but attest rather the increased demand for gasoline and motor lubricants. Furthermore, some smaller operators are understood to be having a more difficult time in securing forward supplies, the larger refiners not having more than enough, apparently, to supply their own stations.

Momentum Upward

Now that the momentum of price increases is so far advanced, many are inclined to think it will carry further, inasmuch as the season of large consumption is just ahead. May has been a big month, tankwagon increases amounting to 2 cents a gallon on the Atlantic Seaboard. It is not a foregone conclusion, however, that prices will continue to advance.

Price increases have in the past invariably resulted in increased refinery production and greater service station competition as the margin of profit in retail sales has increased. The prevalence of cracking, with comparatively large stocks of crude and fuel and gas oil on hand should serve to make an expansion of production comparatively easy. It must be remembered, however, that available statistics on production and stocks are issued somewhat late and are often difficult of interpretation. The tendency so far as production is concerned, however, appears to be upward, both for crude and refined products, at this time.

So far as consumption on the Atlantic Coast is concerned, the weather has been on the whole unfavorable so far this year. The coming week end will have a great deal to do with gasoline sales, and refiners are hoping for a definite improvement. Cold and wet weather has been the rule so far, and there have been few week-ends with ideal motoring conditions. Last year the weather at this time was consistently warm, even hot at times, and motoring was about the only source of relief for harried city dwellers.

Offsetting the unfavorable weather has been the larger number of motor vehicles in use this year. The fact is that the oil trade has not been able to estimate what consumption will be under ideal conditions.

Stress Quality

It is not necessary to say that there is some gasoline of poor quality being sold in the East, at concessions. This is an old condition, but it has been a difficult situation for the established companies to meet. One weapon which promises to prove potent against this sort of competition is that of stressing quality through advertising. The large number of companies going in for extra high quality gasoline has served to bring to the attention of motorists the desirability of getting good gasoline.

Leading Standard and independent companies selling high-test gasoline report unusually good sales of this product, showing that motorists really desire to get gasoline of good quality, and where higher quality gasoline is sold under special brand names they know that it is as represented. It is surprising the number of automobile owners that are willing to pay a premium for the better gasoline, showing that quality is put above cost.

Other Products Secondary

Just at the present the activity in the markets for gas oil, kerosene and fuel oil is nominal. Prices are holding firm in sympathy with gasoline and crude oil, but there does not seem to be any special feature worthy of mention.

Lubricants Higher

Lubricating oil prices are generally higher, with advances ranging from ¼ cent to 2 cents a gallon. Cylinder oils are about the only ones not affected. The lubs which are strongest are those which are usually looked upon as competitive with Gulf Coast markets. This is regarded as an unusually good sign. Advance in cylinder oils is expected in the near future.

Bright stock has been advanced 1 cent, being quoted at Bayonne refineries at 41 cents a gallon for large lots. White neutral is 2 cents higher at 37 cents.

Pale oils show a gain of ½ to 1 cent a gallon, "25 oil" being quoted in bulk at 13 cents and "28 oil" at 8 cents. Red oils have been advanced on the average from ¼ to ½ cent a gallon. One-sixty viscosity No. 7 red is 11 cents, while 295 viscosity No. 6 is 14 cents a gallon, gains of ¼ and ½ respectively.

Wax Slightly Higher

Advances were also put into effect by eastern refiners on paraffin wax of ⅛ to ¼ of a cent a pound, quotations ranging now from 7 to 7¼ cents a pound on 120 a.m.p. to 137 a.m.p. This is believed to mark the turn of the market, but it is pointed out quotations are still pretty close to bottom.

The better feeling prevalent in the wax market is due to the arrival of belated industrial orders, and a good export demand.

Exports

Paraffin wax has been the feature of the local oil export market. Shipments of refined wax have continued for some weeks on a large scale. Last week the total was swelled by one consignment of more than 6,000 bags to China. The total exports reported for the week amounted to 3,647,040 pounds of refined wax and 755,250 pounds of crude, a total rivaling any previous week, namely, 4,402,290 pounds.

Exports of lubricating oil in barrels were fairly large during the week, aggregating 1,750,500 gallons. Shipments of lubricating oil in cases amounted to 372,990 gallons.

Petroleum asphalt shipments were large, amounting to well over a million pounds.

One of the largest shipments of cased kerosene went out during the week to China, involving 1,200,000 gallons. This made up more than half of the week's total shipments.

The following table shows principal exports of petroleum and petroleum products from New York reported during the last three weeks (figures in gallons unless otherwise noted in parentheses):

	Week Ended		
Gasoline:	May 26	May 19	May 12
Bulk	.....	2,538,982	2,750,824
Barrels	.....	.....	126,350
Cases	538,110	1,904,760	1,932,000
Kerosene:			
Bulk	.....	.....	645,597
Cases	2,030,910	1,981,230	2,604,380
Lubricating oil:			
Bulk	.....	1,058,951	1,269,034
Barrels	1,751,500	1,816,100	1,881,100
Cases	372,990	247,470	128,240
Lubricating grease:			
Barrels (lbs.)	.....	771,750	254,250
Paraffin wax:			
Bags (lbs.)	3,647,040	1,032,240	1,413,060
Barrels (lbs.)	755,250	109,250	839,800
Petroleum asphalt:			
Barrels (lbs.)	1,263,975	4,656,900	1,823,525
Crude oil:			
Bulk	.....	.....	815,452

The foregoing includes shipments of 500 bbls., 1,000 cases or more.

Tanker Charters

The tanker charter market was somewhat more active, and rates were somewhat higher, during the past week. Fixtures for July loading were somewhat more frequent. The volume of business so far is considerably under that of a month ago, however.

New fixtures include:

Tanker Albert E. Watts (Am.), California to Philadelphia, fuel oil, 86 cents a barrel, June loading.

Tanker Artza Mendi (Span.), 2,403 tons net, gasoline, Gulf to United Kingdom-Continent, 27s. 6d., June-July loading.

Oil Receipts Larger

Estimated receipts of crude and refined oil at Atlantic Coast ports by tanker for the week ended May 26 were 4,244,000 bbls., a daily average of 607,000 bbls., comparing with 4,117,000 bbls., a daily average of 588,000 bbls., for the week ended May 19.

Receipts from the Gulf Coast aggregated 2,587,000 bbls., a daily average of 370,000 bbls., compared with 2,692,000 bbls., or 385,000 bbls. daily, the preceding week.

Receipts of California oil for the week were only 426,000 bbls., a daily average of 61,000 bbls., against 589,000 bbls., or a daily average of 84,000 bbls., the preceding week.

Imports continue large. During the week ended May 26 they totaled 1,231,000 bbls., or 176,000 bbls. a day. In the preceding week they aggregated 836,000 bbls., a daily average of 119,000.

Imports from South America for the week totaled 271,000 bbls., a daily average of 39,000 bbls.

The following table shows estimated daily average receipts of crude and refined oil by water at Atlantic Coast ports from the Gulf and Pacific Coasts of the United States, and imports, for the last three weeks; also monthly record for the last 12 months (figures in barrels):

	Week Ended		
	May 26	May 19	May 12
Gulf	370,000	385,000	290,000
Pacific	61,000	84,000	56,000
Imports	176,000	119,000	133,000
Total	607,000	588,000	479,000

Daily Averages by Months	Gulf	Pacific	Imports	Total
1926:				
April	326,000	92,000	146,000	564,000
March	317,000	97,000	178,000	592,000
February	332,000	73,000	122,000	527,000
January	279,000	59,000	96,000	434,000
1925:				
December	298,004	56,000	103,000	457,000
November	259,000	36,000	92,000	387,000
October	249,000	36,000	102,000	387,000
September	306,000	66,000	76,000	448,000
August	291,000	54,000	90,000	435,000
July	391,000	63,000	107,000	561,000
June	379,000	66,000	118,000	563,000
May	312,000	81,000	145,000	538,000

The foregoing estimates are based on the carrying capacity of incoming oil-laden tankers.

CALIFORNIA RECEIPTS AND PETROLEUM IMPORTS

Imports of crude and refined oils at the principal United States ports for the week ended May 22, totaled 1,329,000 bbls., a daily average of 189,857 bbls., compared with 1,314,000 bbls., a daily average of 187,714 bbls. for the week ended May 15, and a daily average of 181,286 bbls. for the four weeks ended May 22.

	Week Ended May 22
At Atlantic Coast Ports—	
Baltimore	69,000
New York	699,000
Philadelphia	48,000
Others	63,000
Total	879,000
Daily average	125,571
At Gulf Coast Ports—	
Galveston district	18,000
New Orleans and Baton Rouge	432,000
Total	450,000
Daily average	64,286
At All United States Ports—	
Total	1,329,000
Daily average	189,857
Daily average 4 wks. ended	181,286

Receipts of California crude and refined oils at Atlantic and Gulf Coast ports for the week ended May 22, totaled 144,000 bbls., a daily average of 20,571 bbls., against 807,000 bbls., a daily average of 115,286 bbls. for the week ended May 15, and a daily average of 92,429 bbls. for the four weeks ended May 22.

	Week Ended May 22
At Atlantic Coast Ports—	
New York	84,000
Philadelphia	60,000
Total	144,000
Daily average	20,571
At Gulf Coast Ports—	
Total Atlantic and Gulf Coast Ports	144,000
Daily average	20,571
Daily average 4 wks. ended	92,429

ITALY'S OIL COMPANY SEMIGOVERNMENTAL

Italy's hope to achieving independence from importation of petroleum, gasoline and oils has taken tangible form with the creation of the semigovernmental General Italian Petroleum Co. The company is capitalized at 100,000,000 lire, of which 60,000,000 are subscribed by the Ministry of Finance, 20,000,000 by the National Insurance Institute and the remainder by the National Social Insurance Co.

Its purpose is to conduct researches, purchase and develop wells and transport oil. Stock in existing similar companies also will be purchased. Senator Ettore Conti is the president, with Gelasio Castani and Pietro Pirelli as vice presidents.

Forty Major Companies in Refining

Have 78.7 Per Cent of Skimming Capacity and 90 Per Cent of Cracking Facilities. Recent Mergers Important

By C. O. Willson

Refinery operations in the United States are centered in 40 major companies. These companies—several of which are closely allied or subsidiary organizations—operating 122 refineries have 78.7 per cent of the total crude capacity of the operating plants in the United States and 90 per cent of the cracking capacity. Of the combined crude skimming and cracking capacity these companies have 83.9 per cent.

The foregoing and the data given in the accompanying table are based on the annual refinery review of The Oil and Gas Journal, which appeared in the May 6 issue and the survey of cracking operations which was published in the May 20 issue. These two surveys showed that on May 1, there were 355 refineries operating with a combined skimming capacity of 2,769,430 bbls. daily. One hundred and fifty of these refineries had cracking equipment with a rated capacity of 980,960 bbls. daily. This gave a total skimming and cracking capacity of 3,650,390 bbls. daily.

The accompanying table shows that while there are approximately 250 companies operating 355 refineries in the United States, the bulk of the plant capacity is in the hands of relatively few companies. The first 10 companies in fact from the standpoint of manufacturing facilities are more important than the remaining companies owning 345 refineries. These companies have 44.5 per cent of the skimming capacity. Their dominant position, however, comes from the fact that they have 60.8 per cent of the total cracking capacity giving them 50.1 per cent of the combined skimming and cracking capacities.

First Five Companies

It is interesting to note in this connection that the first five companies—Standards of New Jersey, Indiana, and California, the Gulf Refining Co. and The Texas Company—have approximately 75 per cent of the total for the first 10 companies. For the entire United States these five largest refining companies which have as equally important position in the producing and marketing branches of the industry, have 30.9 per cent of the total skimming capacity and 39.1 per cent of the cracking capacity.

After the first five companies, plant capacities rapidly decrease. The second 10 companies have less than half as large skimming capacity as the first 10 companies and are only one-fourth as important in facilities for cracking. The number of plants bears the relationship of 47 to 29.

Although they operate practically the same number of refineries the third 10 companies show a rapid slump in refinery capacity. These 10 companies have 9.3 per cent of the total skimming capacity and practically the same percentage in cracking. The fourth and final 10 companies operate 18 refineries which have 5.5 per cent of the country's skimming capacity and 5.4 per cent of the cracking capacity.

Capacities continue to decline rapidly after the first 40 companies. Of the remaining 233 refineries in the United States, only 21 have a combined skimming and cracking capacity of more than 10,000 bbls. daily. Thirty-two have a combined skimming and cracking capacity between 5,000 to 10,000 bbls. daily, while the remaining 181 plants have capacities less than 5,000 bbls. daily.

Listing of Companies

The manner of listing the first 40 companies was an arbitrary arrangement of the writer's. Some would probably make different listing. They might include the subsidiary companies of the Standard of New Jersey in determining its total capacity. This would mean adding the capacities of the Humble Oil & Refining Co. and the Standard Oil Co. of Louisiana. This would give the New Jersey company a total skimming and cracking capacity of 512,110 bbls. daily, or approximately 15 per cent of the entire country.

Another combination which could be made would be the consolidation of the Roxana Petroleum Corp. and the Shell Co. of California, both subsidiary companies of the same parent organization. A smaller concern belonging to the Dutch Shell group is the New Orleans Refining Co., located at New Orleans, La. Adding the 13,000-bbl. cracking and skimming capacity of the New Orleans company to the totals for the Roxana and Shell companies and the combined skimming and cracking capacity of this group is in excess of 200,000 bbls. daily.

To the Standard Oil Co. of Indiana could be added the capacity of the Mexican Petroleum Corp., which is 25,000 bbls. daily. The Indiana company has had a controlling interest in the Mexican Petroleum for over a year.

Effect of Mergers

Other more recent mergers have effected the relative importance of the major companies in refining. The Standard Oil Co. of New York, and the General Petroleum Corp., which are listed separately in the accompanying table, were recently merged. The latter company has no cracking facilities but its plants have a skimming capacity of 50,000 bbls. daily. Adding to this total the five plants of the Magnolia Petroleum Co., which is controlled by the Standard Oil Co. of New York, and the latter company which was formerly of little importance in refining, is now one of the largest of the Standard group.

Another important merger in refining is that of the Tidewater Oil Co. and the Associated Oil Co. The latter has a cracking capacity of only 800 bbls. daily and the cracking facilities of the former are relatively small in comparison with the crude capacity. The total skimming capacity of these two organizations, however, is 119,500 bbls. daily, placing the combination among the first 10 companies in that phase of refining.

One merger of great importance in the production end of the industry, had little significance in refining. That was the final merger of the Standard Oil Co. of California and the Pacific Oil Co. The latter company operates one small skimming plant with a rated capacity of 2,000 bbls. daily. This is a mere drop in the bucket when compared with the crude capacity of the Standard Oil Co. of California, which is the second largest in the United States.

Other mergers or sales which have been rumored during the past few months, if ever completed, will add to this concentration of refining capacity among the major organizations. The most recent of these reported mergers involves the Atlantic Refining Co., Marland Refining Co. and the Union Oil Co. of California. This combination, should it materialize, would result in another organization with total refining capacity in excess of 200,000 bbls. daily. The recent purchase of a controlling interest in the Beacon Oil Co. by the Louisiana Petroleum Corp. is another indication of the importance of mergers. Considered on a basis of subsidiary or merged companies the 40 major refining organizations dwindle to 33 companies. These 33 companies have no connection with each other so far as their refinery operations are concerned.

Industrial Importance

The industrial importance of this concentration of refining capacities among relatively few organizations is obvious. It means that the producers of crude oil must look to these companies to absorb the bulk of their production. In fact, if a survey was made of the crude production of these same companies including subsidiary organizations it would be found that their position would be as dominant in producing raw material as it is in refining the finished products of petroleum. Practically all of the 40 companies have crude production sufficient for at least a part of their refinery requirements with several having a surplus which is sold to other refiners.

In the marketing branch the same situation obtains. These companies sell through their own marketing facilities the bulk of the gasoline and other products sold in the United States. This applies both to domestic and foreign consumption.

Importance of Cracking

The importance of cracking in determining the relative position of refinery organizations is apparent from a study of the table. The Standard Oil Co. of California has practically the same skimming capacity as the Standard Oil Co. of New Jersey. Its cracking facilities up to the present time, however, have been confined to experimental units and due to this fact the Standard Oil Co. of Indiana takes second place. If the cracking facilities of the California company bore the same relationship to its skimming capacity as is found at most of the larger eastern refineries, the West Coast company would easily be the outstanding refinery organization of the entire world.

The same situation is found at all California refineries. Outside of the Shell Co. and the Union Oil Co., the cracking equipment has no industrial significance. Even in the case of the Shell and Union companies, the cracking capacity at the present time is still relatively low when compared to their cracking equipment. In the past the explanation for this situation has usually been that the crude was available in such large quantities and at a price which did not justify the installation of cracking equipment.

This explanation, however, hardly applies at the present time when there is keen competition for crude supplies with prices which are generally in line with those prevailing in the eastern field. One of the largest refiners on the West Coast explains the situation as due to the mechanical difficulties in cracking including the treatment of finished products to meet the usual commercial specifications. In this connection it has been pointed out that with recent consolidations more and more of the fractions of crude suitable for cracking will be moved to eastern refineries. It has been found that blending the California cracking stock with that of the eastern area before processing lessens the mechanical difficulties and gives a pressure distillate which is easier to treat for a finished product.

Despite this situation it is probable that the next year or two will see a more rapid expansion in cracking facilities on the West Coast with a corresponding increase in the importance of that area as a refining center.

Among the first 10 companies shown

Table Showing Capacities of First 40 Refining Companies in the United States Including Cracking.

Operating Plants		Crude Skimming Capacity Bbls. Daily	Cracking Capacity Bbls. Daily	Total Capacity Bbls. Daily
355	United States	2,769,430	980,960	3,650,390
	First Ten Companies			
	Name of company—			
6	Standard Oil Co. (New Jersey)	226,000	104,160	330,160
6	Standard Oil Co. (Indiana) (Includes Midwest Refining Co.)	146,000	133,000	279,500
3	Standard Oil Co. (California)	225,000	1,000	226,000
3	Gulf Refining Co.	140,000	69,000	209,000
10	The Texas Company	120,500	76,700	196,700
7	Sinclair Refining Co.	90,000	90,000	180,000
2	Roxana Petroleum Corp.	66,500	40,400	106,900
5	Magnolia Petroleum Co.	82,000	22,000	104,000
1	Standard Oil Co. (Louisiana)	70,000	30,000	100,000
4	Atlantic Refining Co.	66,500	30,900	97,400
47	Total	1,232,500	597,160	1,829,660
	Percentage of total capacity	44.5%	60.8%	50.1%
	Second Ten Companies			
3	Shell Co. of California	72,000	16,800	88,800
2	Humble Oil & Refining Co.	54,000	27,950	81,950
6	Pure Oil Co.	45,000	34,000	79,000
4	Union Oil Co.	66,400	9,400	75,800
3	Associated Oil Co.	70,000	800	70,800
1	Pan American Petroleum Co.	50,000	15,000	65,000
3	Tidewater Oil Co. (Includes subsidiary companies)	49,500	6,200	55,700
1	Mid-Continent Petroleum Corp.	40,000	15,000	55,000
3	Standard Oil Co. of New York	37,500	14,700	52,200
3	General Petroleum Corp.	50,500	.....	50,500
29	Total	534,900	139,850	674,750
	Percentage of total capacity	19.3%	14.2%	18.5%
	Third Ten Companies			
7	Cities Service Co. (Includes all subsidiary companies)	37,000	7,850	44,850
3	Richfield Oil Co.	36,000	8,000	44,000
1	Marland Refining Co.	25,000	15,000	40,000
6	*Continental Oil Co.	25,500	13,100	28,600
2	Standard Oil Co. (Ohio)	17,500	20,000	37,500
1	Indian Refining Co.	20,000	10,200	30,200
1	New England Refining Co.	30,000	.....	30,000
2	Vacuum Oil Co.	20,000	9,500	29,500
3	California Petroleum Co.	29,000	.....	29,000
2	Producers & Refiners Corp.	17,000	10,000	27,000
28	Total	257,000	93,650	350,650
	Percentage of total capacity	9.3%	9.5%	9.5%
	*Includes Texhoma Oil & Refining Co.			
	Fourth Ten Companies			
1	Mexican Petroleum Corp.	25,000	.....	25,000
3	Barnsdall Refineries, Inc.	16,000	7,200	23,200
2	Sun Oil Co.	18,000	4,600	22,600
1	Solar Refining Co.	12,000	10,000	22,000
1	Skelly Oil Co.	14,000	6,800	20,800
1	Champlin Refining Co.	16,000	4,000	20,000
3	Transcontinental Oil Co.	13,500	6,000	19,500
2	Louisiana Petroleum Corp.	15,000	3,500	18,500
3	White Eagle Oil & Refining Co.	13,000	5,500	18,500
1	*Standard Oil Co. (Kansas)	12,000	6,000	18,000
18	Total	154,500	53,600	208,100
	Percentage of total capacity	5.5%	5.4%	5.5%
	*Beacon Oil Co. is the 41st refinery organization. It also has a total capacity (skimming plus cracking) of 18,000 bbls.			
122	Total first 40 companies	2,178,900	884,260	3,063,160
	Percentage of total capacity	78.7%	90.0%	83.9%

in the table it will be noted that The Texas Company has more plants than any other company. Its 10 refineries are scattered with at least one refinery in all the important crude producing areas with the exception of California.

The explanation for this large number of plants probably lies in the fact that The Texas Company markets its gasoline over a wider area than any other company in the United States. The company, unlike the Standard companies, is not limited to any particular section in the marketing of its products.. The several Standard organizations generally concentrate their marketing facilities in relatively small areas.

Due to that fact it is feasible for them to build refineries with large capacities within or close to these marketing territories. The Texas Company, on the other hand, has deemed it advisable to build several smaller plants located in different parts of the country to take care of its marketing needs. The same situation probably explains the fact that the Sinclair Refining Co., the Pure Oil Co. and the Cities Service organizations each have several refineries. These companies, like The Texas Company, market in all parts of the country east of the Rocky Mountains and have refineries conveniently located as possible to serve this distribution.

ROCKY MOUNTAIN FIELDS

(Continued from Page 137)

The Government royalty oil in Wyoming fields showed a decline of $30,000 for the month of April. The total receipts for April amounted to $412,737.77 obtained mainly from the Salt Creek Field and coming through the Sinclair Oil Purchasing Agency which firm handles all the royalty crude through its pipeline to Kansas City.

The United Oil Co. at Florence, Colo., suffered a loss of $150,000 through fire. One 55,000-bbl. tank holding about 25,000 bbls. of crude at the time, one small tank and several naphtha stills were destroyed. The fire caught in some undetermined manner from the naphtha stills and spread to the tanks.

The Carter Oil Co. has made a location on the Horse Creek structure about 35 miles north of Cheyenne, Laramie County, Wyoming. This area has been known as a possibility for some years past, but the oil men generally considered it too deep drilling for any except the larger companies. The location for the new wildcat is on Section 36-17-70.

Salt Creek Completions

The Midwest Refining Co. completed seven new producers in the Salt Creek Field the past week. The Wyoming Associated Oil Co. found a producer good for 408 bbls. on Section 26-40-79, at 1,155 feet. The same firm has a producer on Section 24-40-79 at 1,850 feet that will make a pumper and one of the same kind on Section 35-40-79 at 1,645 feet.

The Midwest Oil Co. and the Wyoming Associated Oil Co. on Section 25-40-79, found production at 1,770 feet that will make 20 bbls. The same firm also found a producer on Section 35-40-79 at 1,526 feet that will make 20 bbls.

The Mountain & Gulf Oil Co., on Section 12-40-79, has a second Wall Creek well at 2,560 feet that will make a nominal producer and one on Section 13-40-79 at 2,341 feet that wil make 25 bbls.

The prevalence of Rocky Mountain Fever in this region has become alarming. Every year sees several deaths from this disease, but this year seems to be causing more than any previous season. The disease is caused by the infection through the bite of ticks and no remedy has been found that will effect a cure where a person is badly infected. George S. Clark, a contractor in the oil fields near Riverton is the latest victim.

The best recourse in case of tick bite is considered to remove the tick through its own volition rather than kill it or pull it out. The tick breathes through tubes that traverse the body from the head to the rear and thus any liquid placed on the tick after the head has entered the skin would kill the insect by choking.

When a tick is found imbedded, a match or toothpick end dipped in turpentine is used to draw a circle about the insect. The turpentine enters through the pores of the skin and soon mingles with the blood. The tick immediately backs out and may be knocked off. Then the wound is treated with iodine or mercurchrome, the latter being preferred. This treatment is used by most travelers of the plains country who are liable to be infected and good results are reported. Care should be taken that the turpentine does not touch the tick. This treatment was first suggested in 1917 by an oil man.

Runs From the Fields

Salt Creek	50,940
Sunburst	21,500
Teapot	1,200
Big Muddy	3,490
Grass Creek	2,940
Elk Basin	620
Greybull	55
Rock River	2,840
Rex Lake	500
Lance Creek	1,740
LaBarge	100
Poison Spider	690
Osage	350
Hamilton Dome	1,280
Lander	300
Byron	40
Lost Soldier	4,940
Ferris	110
Simpson Ridge	170
Lake Basin	170
Florence	360
Cat Creek	2,920
Moffat	3,635
Iles Dome	100
Tow Creek	100
Boulder	25
Rangeley	100
Artesia	3,000
Hogback	450
Rattlesnake	365
Total	105,630

SOUTHWEST TEXAS

(Continued from Page 138)

interest due to that even if the Edwards does not produce here. Casing was expected to be set so that the test could be made by the middle of this week.

Utah Texas Co.'s No. 1 Ivan Vick, in the southern part of Bexar County, 20 miles southwest of the Marland test, is drilling around 2,812 feet, and is about 12 feet into the Edwards and a few inches is sufficient to wear out a bit so that progress is very slow. Both it and the Marland well seem to be proven on structure and with some very favorable indications. Marland's test, when it got through the first few feet of the Edwards was counted discouraging by some. It is looking much more encouraging now. I. L. Dingman is preparing to drill in the southern part of Bexar County. Humble Oil & Refining Co.'s No. 1 Yturri is drilling below 800 feet. The test is a little northeast of Southton. It was delayed the past week in resetting the first string of casing. This is Humble's third test in that end of its lease block. Storey & Stieren's No. 1 Cover, a few miles east of Humble, is drilling below 750 feet. It had a 10-foot sand at 715 to 725 feet believed to be the same sand as is producing at approximately the same depth in the Southton Field. The sand was saturated with oil but was not tested. Tidal Oil Co.'s No. 1 Cantu, 1 mile south of Adkins, and north of the Storey & Stieren test, is drilling at 200 feet.

Brooks County

Benedum & Trees' No. 1 Wormser, in the northwest corner of Brooks County, was waiting for fuel oil at 2,695 feet at last reports. Ballard & Underwood, in the northeast corner of Brooks County on the Lasater ranch, is laying a water line preparatory to testing a salt dome.

Caldwell County

North & South are drilling at 6,050 feet in their No. 1 Kelly in the Luling Field, and at 5,390 feet in No. 1 Tiller. J. B. Ashe has rigged up and spudded in and is drilling at 1,000 feet in No. 1 Dick Jolley, northeast of the town of Lockhart.

Edwards County

X. K. Stout's No. 2 Peterson in Edwards County is drilling at 200 feet, having recently spudded in.

Gonzales County

Bost Brothers, drilling contractors, have spudded in a test in the southern edge of the townsite of Waelder, in the northern part of Gonzales County, for a group of citizens and are down about 400 feet. The test is an effort to develop some shallow production found by L. L. Jones in a test drilled by him to 540 feet, but lost with a fishing job. L. L. Jones, with a 112-foot derrick, is starting a test on the Lampkin farm, 2½ miles south of Waelder.

Frio County

Wiley Wyatt is rigged up on No. 1 W. M. Fain, 5 miles east of Pearsall in Frio County. Frio Petroleum Co. is drilling at about 700 feet in its No. 1 Lyles-Sloan.

Fayette County

O. W. Killam is drilling at 2,600 feet in No. 2 Kroether, in Fayette County, 6 miles north of Schulenberg.

Guadalupe County

John W. Hooser is rigging up on a test on the Fulcher tract, a little west of the San Marcos River, and a little north of the Luling Oil Field, where Allen drilled a test a couple of years ago and got quite a little oil in the Austin chalk. A. P. Mueller of Seguin has filed notice of intention to drill on the D. F. Smith land in the W. H. Hunter survey, in Guadalupe County.

J. M. Davis is drilling at 1,530 feet in No. 1 Schultze in Guadalupe County in the south edge of the town of New Berlin. Payne & Bond, a little to the south, are shut down at 1,882 feet on No. 1 Rosenbrock and it is reported are figuring on a location a little to the east. The New Berlin territory on the Guadalupe side of the Cibolo River and the St. Hedwig area across the river a little to the west in Bexar County, where the Marland is now fixing to make a test, are areas that have long attracted attention of oil operators. A few tests have been drilled but not sufficient as yet to test the structures. The Texas Company has spudded in No. 1 McGonigal in the eastern part of Guadalupe County, a little south of Kingsbury, and south of the Luling Field.

Live Oak County

George B. Pickett is drilling at 920 feet in his No. 3 George West, at Kitty in Live Oak County, a little south of Three Rivers.

Maverick County

Johnstone & Hout's No. 1 Whipff in Maverick County has resumed drilling at 710 feet, after being shut down for a year. At 800 feet the past week in ran into a gas sand and blew out. There was some water trouble but the water has been shut off and the gas tested a dry gas. The well is being drilled deeper. Rycade Oil Corp.'s No. 1 Chittim, in Maverick County, 17 miles east of Eagle Pass, and on which it has been drilling for nearly a year, is drilling at 4,000 feet. Humble Co. is drilling at about 1,000 feet in No. 1 D. Sullivan, and is arranging to move another steel derrick and rig for a second test.

Medina County

Ina Oil Co.'s No. 1 Hoffman, in Survey 535, in Medina County, 8 miles south of Hondo and 4 miles west of the Ina Oil Field, which had one 30-foot oil sand at 320 to 350 feet, went 30 feet into another sand at 828 to 855 feet. The first sand was not tested due to the fact that the rig is a heavy type for an Edwards lime test and a spudding machine is being moved in to test the first sand. The second sand is to be tested and 8¼-inch casing will be set so the hole can be continued if advisable. The sand is believed to be the same as is producing in the Ina Field. It is a better sand, however, than in the Ina Field, where the sand floats in the heavy oil giving considerable trouble. The test will probably be completed this week. Ina Co.'s No. 1 Finger, a few miles farther west, is drilling at 250 feet. Henderson & Holden's No. 3 Adams, a mile south of the Ina Field and 1,000 or more feet north of Nos. 1 and 2, each of which are gassers at about 900 feet, is drilling this week at about 325 feet, having recently spudded in and it has a slight showing at 290 feet, which compared to a showing in the other wells indicates that the log is a little higher. Henderson & Holden are continuing other tests in hopes of finding an oil pool. Eastham & Tarver, on the Howard farm in Survey 91, a mile east, have set casing at approximately 850 feet and have the same sand. They will test early this week. Plateau Oil Co.'s No. 1 Carle, in Harrison Survey No. 72½, are fishing for a cone bit at 2,100 feet, where they are in the top of the Edwards lime. J. R. McCaldin's No. 1 Thompson, west of Devine, is drilling at 1,040 feet.

Milam County

Alexander-Lyles have abandoned No. 1 Seelke in Milam County, a little north of Rockdale. It was an Edwards lime test. It was not far from the test of John E. Lee drilled last year which was not entirely finished due to a fishing job though it got down to low levels. J. W. Kemp and others set casing at 761 feet in a wildcat, 2 miles north of Minerva, being drilled for shallow oil. The well was bailed last week and will drill deeper. In the Rockdale Shallow Field, Clifton has set casing at 825 feet in No. 1 Luetge, John A. Lee has completed a well on the Milton Phillips lease. E. Williams and others of Corsicana are drilling No. 1 Posey near Cameron which is a wildcat. It is in hard rock at 600 feet. Chicago Land & Oil Co. has increased its capital stock to $80,000 and has announced a program to drill six new wells on the Gaither-Bowman lease, 2 miles north of Rockdale in the shallow field. The company has four producers completed and is starting on the fifth and will drill five after that, making a total of 10 on the lease. Union Production & Power Co. has completed its No. 4 Strelsky pumping about 30 bbls. the first day.

FUEL OIL ALONE FIRM IN SHREVEPORT MARKET

SHREVEPORT, La., May 29.—Fuel oil was the only refined product in the Shreveport territory that held firm during the week as all other products softened and prices went down. It remained steady throughout the week and was scarce.

Grade C natural gasoline took the most surprising turn after showing signs of strengthening the week before. Its market at the first of the week was slow and as the product softened its price went off one-half cent. Grades A and B likewise eased down. Movement during the week was slow.

U. S. Motor fuel settled down to a price level but its market was weak and the product moved slowly while 64-66 375 gasoline was in a little better position but finding a slow market. Kerosene eased at the first of the week and its price went off one-half cent as its market grew sluggish.

TOO LATE TO CLASSIFY

DESIRE to get in touch with party or company that are interested in acquiring oil leases in Alfalfa and Woods Counties. Alfalfa County Investment Co., Cherokee, Okla.

YOUNG MAN, 30 years old, 6 years experience in Mexico as field accountant for large oil company, desires position in South America. Thorough knowledge of oil field practices. Speaks Spanish. Best references. Box B-326, The Oil and Gas Journal, Tulsa, Okla.

YOUNG MAN, age 30, at present employed as petroleum valuation engineer, desires position with large oil company in minor executive capacity offering better opportunity for advancement. University degree, specializing in petroleum geology, valuation and accounting. One year's experience producing leases, two years accounting department, two years petroleum engineer and income tax, also good business training, including law, finance, etc. Intelligent, dependable and not afraid of hard work. Box B-307, The Oil and Gas Journal, Tulsa, Okla.

THIRTY-FIVE THOUSAND ACRES cutover lands in the heart of the Ozarks, suitable for fruit growing and dairying. From $3 to $4 per acre. Arkansas Land Co., Leslie, Ark.

ORIFICE meter reading and checking for monthly statements and resettlement. Rates reasonable. Send your charts to R. L. Mosier, Okmulgee, Okla.

XUM

REFINING AND MARKETING

The Texas Company Advances Gasoline. Drop Q. D. A. Plan

CHICAGO, June 1.—The first important break in the quantity discount method of selling gasoline in the Middle West became effective today when The Texas Company announced that it would discontinue making these contracts and would terminate all existing agreements as soon as the time limit expired. Many of these agreements were for 30 days with a few yearly contracts.

The decision as to contracts was announced along with a 1-cent advance in gasoline tankwagon and service station prices nation wide. The tankwagon price in Chicago is now 19 cents and the service station 22 cents. This is 1 cent above the Standard of Indiana price. The tankwagon of the latter company is 18 cents for dumps of less than 100 gallons and 17 cents for larger dumps. The Texas Company does not recognize the 100-gallon discount price in its schedules.

The quantity discount plan was inaugurated by the Standard Oil Co. of Indiana for the 11 states of the Middle West in which it operates about a year ago. It provides a sliding scale of prices for both the retailer and consumers of gasoline based on the quantity purchased. The maximum discount is 2 cents under the general tankwagon or service station prices.

It is known that The Texas Company has had a very satisfactory increase in its gasoline sales since it started about two weeks ago the distribution of what was termed "A New and Better Gasoline." This gasoline is a high gravity product with low initial and endpoints with antiknock characteristics claimed. The product is said to compare favorably with some gasolines sold in this territory at premium prices. Due to this fact it is expected that the company will continue to ask 1 cent above the price for the average domestic grade regardless of whether other companies meet their advance.

Information obtained at the Standard of Indiana, Sinclair, Roxana and other large distributors indicated that they had no immediate intention of meeting The Texas Company advance.

CALIFORNIA MARKET HIT BY BOOTLEGGERS

LOS ANGELES, Calif., May 27.—The local motor gasoline market has not yet shown the strength expected at this time of year. In some quarters there is even talk of a price reduction due to further price-cutting by the so-called "bootleggers." During the past few weeks bootleg gasoline has been delivered to service stations as low as 15 cents per gallon in increasing volumes. In fact, it is reported on fairly reliable authority that one or two of the large marketing companies are giving certain independent service stations as much as a 5½-cent differential on gasoline. This is only being done in isolated cases where the volume of business done by the station is large enough to be very attractive to the oil company and when the oil company is able to stock its products 100 per cent. If this situation continues to grow worse, however, the Standard Oil Co. of California will probably retaliate by reducing present prices.

On the other hand, the majority of oil marketers do not believe prices will go down. The bootleg situation, while serious at present, is expected to improve. The recent softening of the natural gasoline market undoubtedly helped the bootlegger to reduce his cost of production. This, coupled with the fact that the summer demand has been unusually slow in starting, due principally to a continued stretch of cool weather, has led the bootlegger to cut prices in an effort to increase sales. This situation will not last very much longer. Natural gasoline has already strengthened somewhat and is expected to improve still more. Vacation periods, which mean long automobile trips in many cases, are already starting and demand for gasoline will necessarily increase materially. The next month should see a decided strengthening in the local gasoline market.

Figures just released by the Bureau of Mines show a reduction in stocks of refinable crude during April of over 5,000,000 bbls. and of heavy crude of almost 3,000,000 bbls. These reductions are attributable almost entirely to the two Union Oil fires and the Standard Oil fire; 8,214,864 bbls. of oil were destroyed in these three fires. Without considering the reductions due to fire, stocks remained practically unchanged during April. The actual decreases, however, will have an effect on the market, especially the large decrease in light crude. This is another reason why gasoline prices will probably stay up during the coming months.

During April, 29,276,487 gallons of natural gasoline were manufactured in California. This is a decrease in production under March of about 9,500 gallons per day. Stocks of natural gasoline at the end of April amounted to 205,841 bbls., an increase over March of 121,748 bbls. This is the largest storage of natural gasoline that California companies have had on hand for many months, but even then it is only about nine and one-half days' supply at the current consumption rate.

Lubricating oils have strengthened somewhat of late, but prices are still low. This market is expected to improve this summer.

CONSTANTIN STATIONS TO CONTINENTAL OIL

The Continental Oil Co. of Denver, during the past week purchased the bulk and retail filling stations of the Constantin Oil Corp. of Tulsa. This sale, which has been pending for several weeks, involves a bulk station and five filling stations in Tulsa, with several bulk stations in nearby towns. The deal is said to involve approximately $100,000.

The Continental has been rapidly expanding its retail marketing facilities in Oklahoma. In addition to the five stations purchased from the Constantin, the company has three stations which it has operated for several weeks with two stations under construction. The company has also expanded its marketing facilities in Kansas, Texas and Arkansas. The Tulsa stations are about 14 miles from its refinery at Sapulpa, Okla.

The Constantin Oil Corp. is a subsidiary of the Constantin Refining Co. of which Pat Malloy of Tulsa is president. The Constantin interests were formerly headed by Capt. E. Constantin, who built the first drive-in station in Tulsa.

OKLAHOMA GASOLINE TAX

OKLAHOMA CITY, Okla., May 29.—Collection records of the oil and gas conservation bureau of the Corporation Commission show that in April, 2,727,551 gallons of gasoline were inspected, an increase of nearly 200,000 gallons over March, and an increase of nearly 300,000 gallons over April of last year.

STERLING FUEL OIL CO.

CHICAGO, May 29.—The Sterling Fuel Oil Co., of this city has increased its capital stock from $30,000 to $100,000, and enlarged the purposes of the organization which has its offices at 5433 S. Wabash Ave.

"BUSINESS IN TEXAS" DECIDED BY COURTS

AUSTIN, Tex., May 29.—An important question to oil companies as to whether an out-of-state manufacturer is "doing business in Texas," by consignment of goods to agent companies in the State was settled by the Supreme Court Wednesday in the General Electric case from Wichita County. Such a corporation is not engaged in Texas business, consequently does not lose legal remedies for failure to take out a State permit, the court held.

Trial court had dismissed the suit of the Southwest General Electric Co., assignee of the General Electric Co., against Nunn Electric Co., for balance on consignment, and the Amarillo Civil Appeals Court upheld the action on the ground the manufacturer had taken out no permit. Supreme court reversed this and ordered the case tried. The opinion was written by Judge Ocie Speer of the Commission of Appeals.

EXTEND RECEIVERSHIP FOR NEW ENGLAND OIL

BOSTON, Mass., May 29.—A petition has been filed in the United States District Court here asking an extension of the receivership of the New England Oil Corp. The petition also asks that the receivership be extended to include the New England Oil Refining Corp. and the New England Oil Steamship Co.

According to the petition which was filed by George Wiltse and others of New York, the note holders committee of the New England Oil Corp. is unable to pay the court decree of $3,327,740.

START FORT WORTH REFINERY

FORT WORTH, Tex., June 1.—The Texas Pacific Coal & Oil Co. has started operating its local refinery. This plant was purchased several months ago from the Invader Oil Corp. It was built in 1920 by the Montrose Refining Co.

The present owners have practically rebuilt the entire refinery and are adding equipment to manufacture a complete line of lubricating oils. The present operations are confined to skimming operations. The lub plant will start operating during the month.

NEW MANAGER FOR HAWKEYE

CHICAGO, May 29.—Bob McDowell, who has been assistant at Denver to H. E. Johnsons, manager of sales division of the Producers & Refiners Corp., is now vice president and manager of the Hawkeye Oil Co. of Waterloo, Iowa. Walter Caward is said to be giving his attention to his private interests which include the Black Hawk Oil Co., and the Caward-Dart Co., builders of tank trucks, pumps and oil burners.

RETURNS TO CHICAGO

Charles W. Perry, Chicago lubricating expert and oil man, who has been in New York for some time is back in Chicago as manager for the Damascus Manufacturing Co., makers of lubricating oils and greases.

BUYS ST. PAUL STATIONS

The White Eagle Oil & Refining Co. has purchased retail marketing properties of the West Brook Tank Line Co. of St. Paul, Minn. The company owned 25 bulk and service stations located in Wisconsin.

JOINT MEETING OF OIL JOBBERS

CHICAGO, May 29.—The Wisconsin and Minnesota independent oil jobbers will hold a joint meeting at the Hotel Stoddard, LaCrosse, Wis., on July 16.

PENNSYLVANIA MARKET SHOWING IMPROVEMENT

OIL CITY, Pa., May 29.—An increase in the demand for gasoline and a real improvement in the status of this product in the Pennsylvania refined market was the big feature of the past week. Actual demand at the refineries has increased and service station owners state that consumption for May is greater than it was in May, 1925. Actual consumption of this product over this week end is expected to set new records for Memorial Day, if the present good weather continues.

Kerosene appears to have passed its peak. Demand is still very big but not so unreasonably great as it has been of recent weeks. The price is still holding up.

Fuel oil is strong and in good demand. Neutrals are among the best products on the market now. They are stronger, the demand is exceptionally good and almost all varieties of neutrals are very scarce in the Pennsylvania market at the present time.

Cylinder stocks continue slow without much demand or much change during the week. Refiners are trying to get more for their stocks in anticipation of an inincrease in Pennsylvania crude prices but they are finding it very difficult to raise their prices. Wax is marking time.

SUNSHINE REFINERY TO RESUME THIS WEEK

The Western Oil Corp. of Texas, which recently purchased the old Sunshine State refinery at Wichita Falls, Tex., is remodeling the plant and expects to start operating it some time this week. The plant will refine approximately 2,500 bbls. of crude oil daily.

The Western Oil Corp., which was recently organized in Texas is headed by Walter Campbell, well known in Mid-Continent producing and refining circles. Marian L. Manville will have charge of the sales of the company. The main offices will be located in Wichita Falls.

OKLAHOMA OIL JOBBERS

OKLAHOMA CITY, Okla., May 29.—At a recent meeting in Oklahoma City of the board of directors of the Oklahoma Oil Jobbers Association, Inc., it was decided to hold the next meeting here on July 8. A resolution was adopted that three meetings a year be held hereafter, probably in July, September and January. J. R. Weldon, of Enid, president, presided at the directors' meeting. "The association work is moving along satisfactorily," says Secretary C. M. Kinney. "The board has authorized a membership drive and this is to be started soon. We ought to end the year with an unusually large membership."

ARKANSAS TAX RULING

The Supreme Court of Arkansas held recently that the capital stock of foreign corporations is not taxable by local authorities in that State. The case was one in which the attorney general sought to collect taxes for three years from the Lion Oil Refining Co. The court held that the capital stock of foreign corporations may not be assessed as tangible property uner the State law and that it is property permanently beyond the borders of the State.

TEXHOMA MANAGER CHANGE

W. L. Scott, sales manager of the Texhoma Oil & Refining Co., has resigned effective June 1. Mr. Scott has had charge of Texhoma sales for the past 2½ years. He was succeeded by T. H. Lawson.

VAPOR TIGHT ROOFS

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- *Welded*
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- *Structural Supports*
- *Tower Tanks*
- *Standpipes*
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Refinery Equipment

Jenkins Cracking Process

Stacks-Breechings

General Steel Plate Construction

Water Softeners
- *Hot Process*
- *Cold Process*
- *Zeolite*
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NEW YORK Grand Cent. Term. | CHICAGO Steger Building | TULSA Atlas Life Bldg. | HOUSTON West Building

Brief Items for Plant Operators

SOUTHERN OIL CORP. SOLD BY RECEIVER

Refineries, pipe lines and other equipment of the Southern Oil Corp. were disposed of at a receiver's sale held last week at Sapulpa, Okla. The sale was the result of suit in Federal Court by the Central Trust Co. of Chicago.

The properties brought a total of $309,275. This does not include the $10,000 bid of R. V. Aycock and the Long Bell Lumber Co. for the refinery located at Walters, Okla. Aycock and the Long Bell have a $30,000 lien against the Walters plant and since there were no other bids for the property the $10,000 will be used in partial settlement of the lien.

The Yale refinery was sold to Herman Sonken, of the Sonken Galambra Iron Corp., of Kansas City, Mo., for a consideration of $50,000. It is understood that Mr. Sonken was representing certain bondholders of the company. H. P. Taubman, of the Taubman Pipe & Supply Co., Tulsa, paid $130,000 for pipe lines, pumping stations and other miscellaneous equipment. Most of this equipment was used in connection with the operation of the Yale refinery.

Sixty-eight tank cars were sold for $50,000 to the North American Tank Car Co. Other property sold included a gas lease in Payne County, Oklahoma, which was sold to H. P. Taubman.

Just what will be done with the properties has not been announced. The Sonken Galambra Iron Corp. does not expect to operate the Yale refinery, which has been shut down for over three years. The refinery has a capacity of 5,000 bbls. daily. Included in the sale was about 200,000 bbls. of storage. It is believed that the new owners will dismantle the plant. The parties holding the lien on the Walters refinery have not announced what will be done with the plant.

Part of the pipe line purchased by H. P. Taubman is under lease to the Johnson Oil Refining Co. of Cleveland, Okla. The remaining equipment purchased by Mr. Taubman will probably be salvaged.

The Southern Oil Corp. for a brief period was one of the outstanding refining organizations in the Mid-Continent Field. Starting in 1919 as a small company, its expansion was rapid. In stocks and bonds the total investment in the company's expansion program was approximately $2,000,000. The bulk of the company's investment was in the two refineries and pipe lines.

The company was at one time merged with the Kansas & Gulf Corp. Later the Southern was returned to its original owners. It was placed in the hands of a receiver early in 1923. J. W. Woodford of Tulsa is receiver of the company. The refineries have not been operated since the receivership.

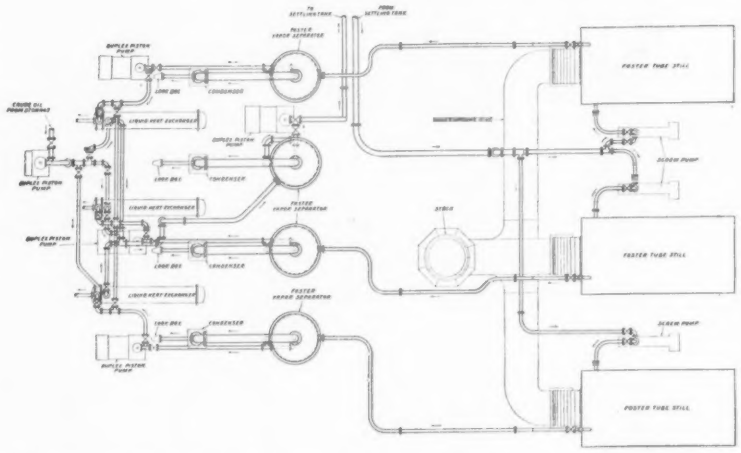
INSTALLING JENKINS UNITS

The White Eagle Oil & Refining Co. has contracted for the installation of one unit of the Jenkins cracking process at its Casper, Wyo. refinery. The Peerless Oil & Refining Co. will also install an additional Jenkins unit at its Chanute, Kans. refinery. The company recently started operating its first unit. Each unit has a capacity of 1,000 bbls. daily.

TO INSTALL NEWTON UNITS

The Mid-Continent Petroleum Corp. has closed a contract with the Newton Petroleum Process Co. for the installation of the latter's absorption and distillation units at its West Tulsa refinery. The equipment will be used in connection with the operation of the refinery's gas recovery system. Two absorbers and two blending stills are part of the equipment to be installed.

NOVEL TOPPING PLANT IN OPERATION



The accompanying diagram shows the main features of a topping plant in operation at the Buenos Aires, South America refinery of the Compania Ferrocarrilera De Petroleo designed by engineers in United States and using equipment supplied by manufacturers in this country.

The three units which have a capacity of 1,500 bbls. daily per unit use Foster tube stills and vapor separators. Southwestern condensers are used to condense the overhead distillate with Wheeler liquid heat exchangers for the fuel oil bottoms. For pumping the crude oil through the heater a Quimby screw pump is used with Wilson-Snyder pumps for pumping the fuel oil through the heat exchangers.

Probably the most interesting feature of the entire installation is the provision made to remove the water from the crude. This is accomplished through special settling tanks after a preliminary heating.

The crude oil from storage is pumped through the three fuel oil heat exchangers to a manifold in parallel, the outlets of the crude oil being also manifolded for delivery to a preliminary vapor separator. In this separator a certain amount of water and a very small proportion of gasoline is liberated and the bottoms are picked up by a second pump, the flow from the separator being regulated by means of a liquid level control attachment. The bottoms then pass to storage and in the heated condition the water separates more readily. From this storage, which is in duplicate, the warm crude is picked up by the Quimby screw pumps and pumped through the Foster tubular heater where its temperature is raised to about 400 degrees Fahrenheit and enters the vapor separator, liberating about 15 per cent of light material. These separators are fitted with liquid level controls and the fuel oil bottoms are pumped through the liquid heat exchangers in which the heat is transferred to incoming crude oil.

AMONG THE TECHNICAL MEN

C. W. Luton, general superintendent for the Paragon Refining Co., of Toledo, Ohio, was born in Butler County, Pennsylvania, May 8, 1893. He obtained his first oil experience at the age of 17 during school vacation period when he worked as a roustabout and tool dresser for his father, C. B. Luton, a well known contractor and producer, in the Macksburg Oil Field at Marietta, Ohio.

C. W. Luton

After graduating from school in 1912, he started work in the laboratories of the Indian Refining Co. at Lawrenceville, Ill., and due to his ability made numerous advances. In 1916, he was made assistant superintendent of the Middle West Refining Co., of Columbus, Ohio, and a short time later was made superintendent. Two years later he was called upon to superintend the building of the Latonia, Ky., refinery of the Petroleum Refining Co., and upon its completion was given charge of the operation of the plant.

In March of the current year, Mr. Luton was made general superintendent of the Paragon Refining Co.'s refinery at Toledo, Ohio, still retaining the charge of the Petroleum refinery which was recently absorbed by the Paragon Company. The Toledo plant is one of the largest and oldest in Ohio. It has a rated capacity of 8,000 barrels daily.

WARM SPRINGS PLANT UNDER NEW OWNERSHIP

CASPER, Wyo., May 29.—Activity is promised for the Warm Springs Field, in the Big Horn Basin of Wyoming, through the completion of a contract by which B. V. Hole and others have taken over the Warm Springs refinery at Thermopolis and will operate it.

The Warm Springs refinery was built in 1919 to handle the crude from the Warm Springs Field, about 20 miles east of Thermopolis. A pipe line was laid to the field which then had about 15 producing wells. The production was black oil and after operating for about two years a fire destroyed part of the plant and it was not repaired for some time.

Later the Singer interests took over the plant and wells in the field, but the operation was not successful and the Singer interests leased to the Shaeffer interests, who operated for a few months and also shut down. It has been standing idle for more than two years.

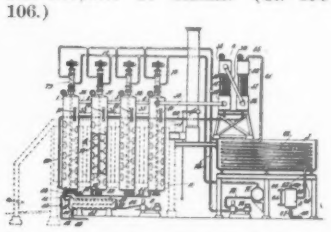
The B. V. Hole interests have made a contract with the Singer interests and will take over the refinery for two years. The Black crude from the Warm Springs Field is reported to contain ichthyol and the new operators will make this product one of their main output.

The oil produced at Warm Springs is a heavy, black crude containing much sulphur and a relatively small content of naphthas. For this reason the field has not interested the larger companies. In the Thermopolis district, the Utah Oil & Refining Co. has found another pool of similar crude at Black Mountain and several other structures there have been drilled and found productive of this grade of oil.

It is the intention of the Hole syndicate to redrill some of the old wells, clean out all the producers and also take the production of the British Associated Oil Co. The production will be purchased on the basis of the heavy oil prices paid in the Grass Creek Field. The amount of production to be had is a question that can only be answered after the old wells have been placed on production again.

Recent Patents

1,583,973. Apparatus for Cracking Oils. Ralph C. Holmes, New York, N. Y., and Frederick T. Manley, Houston, Tex., assignor to The Texas Company, New York, N. Y., a corporation of Texas. Filed June 26, 1919. Serial No. 306,936. 27 Claims. (Cl. 196—106.)



16. In an apparatus for cracking oils, a plurality of vertically disposed retorts, overflow pipes connecting said retorts in series, pipe connections between the vapor spaces of said retorts, means for heating said retorts below said overflow pipes adapted to impart most heat to the first retort of the series, means for supplying oil under pressure to the first retort of the series and causing it to pass progressively through the other retorts, means for drawing off the vapors as they are evolved from the retorts, means for separating out the unconverted portions of said vapors and returning them to the bottom of the first retort for treatment, and means for condensing the remaining vapors under pressure.

Oil Securities at New High for Year

Preholiday Close Shows Activity in Strength in Practically All Issues. South American Issues Getting Attention

By N. O. Fanning

New York Bureau, The Oil and Gas Journal, Room 543, 30 Church St., New York

NEW YORK, May 28.—At the close of business on the principal stock exchanges today the oils looked better than at any time since the first of the year. Activity and strength featured practically all issues. The Oil and Gas Journal's average of 20 representative oil securities, which opened the year at 59.15, advanced to a new high for 1926 at 59.81.

Among the more active issues during the week were Atlantic Refining, which sold off after registering a new high at 128⅜; Pan American Petroleum "B," which scored a net gain of about 4 points; Standard of California, selling near 60; Standard Oil of New York and General Petroleum, and International Petroleum, Ltd. South American oil stocks as a group were fairly strong.

Although rumors of mergers persist, involving principally Marland Oil and Skelly Oil, buying of oils was ascribed largely to the outlook for higher crude and refined oil prices.

Exceptions to the general strong tone in oils included Humble Oil & Refininig, and a few of the Standard Oil pipeline issues. Cumberland Pipe Line sold at a new low of 108.

South American Oils

Activity in South American oil stocks was based on the rapid development of resources in Venezuela and Colombia. International Petroleum is putting Colombia on the map as an oil exporting country in June, when it plans to make its first shipment of crude originating in its Tropical Oil concession. More intensive development of Dutch-Shell's Venezuelan resources is foreshadowed by the announcement of a new stock offering mentioned below.

Royal Dutch

An issue of 24,000,000 guilders of 4½ per cent 20-year bonds of the Bataafsche Petroleum Co., owned 60 per cent by Royal Dutch Petroleum Co., and 40 per cent by Shell Transport & Trading Co., offered June 1 at 97½. The bonds, guaranteed by Royal Dutch-Shell, constitute the second portion of an authorized issue of 72,000,000 guilders, the first portion of which, consisting of 24,000,000 guilders, was offered in January this year. The proceeds are to be applied to the extension of operations in Curacao, Venezuela and Argentina. Of the present issue 6,000,000 guilders of the bonds have already been placed.

Crescent Pipe Line

Officials of the Crescent Pipe Line Co. are not yet able to estimate the amount available to stockholders from liquidation, but this will probably be known before the close of the year. Last July directors decided to liquidate, since users of the line had decided to use tankers in place of the line and no new business could be developed. Work of tearing up the pipeline is ahead of schedule. Out of 274 miles of pipe, 110 miles already have been removed. Of this 51½ miles were taken up before frost set in last year.

Ohio Oil

Ohio Oil Co. has declared an extra dividend of 25 cents and regularly quarterly dividend of 50 cents a share, both payable June 30 to stockholders of record June 5. This is the same extra paid in the previous quarter.

Anglo-American Oil

The Anglo-American Oil Co., Ltd., has issued its pamphlet report for the year ended December 31, 1925. Net profit of £1,393,425 after depreciation, taxes, interest, etc., was reported, compared with £1,474,858 in 1924.

The income account for 1925 compares with 1924 as follows:

	1925	1924
Profit	£2,668,232	£3,038,021
Depreciation	811,485	813,943
Int., taxes, etc.	463,322	749,220
Net profit	£1,393,425	£1,474,858
Dividends	675,000	600,000
Surplus	£718,425	£874,858

The balance sheet of the Anglo-American Oil Co., Ltd., as of December 31, 1925 follows:

Assets: Freehold land, £580,957; construction and equipment, £3,228,197; steamships, barges and tugs, £1,949,786; accounts and bills receivable, £2,077,846; loans to associated companies £991,920; stocks of oils, £3,114,274; investments in British government securities, £347,691; investments in other companies, £2,735,364; cash, £956,436; total, £15,982,471.

Liabilities: Capital stock (represented by 4,000,000 ordinary shares of £1 each) £4,000,000; gold notes, £1,649,060; sundry creditors and accounts and bills payable, £5,858,634; deposits by associated companies, £294,206; dividends declared, £313,707; insurance reserve accounts, £160,892; investment reserve, £403,146; reserve, £2,000,000; surplus £1,302,826; total, £15,982,471.

Pennok Oil

The Pennok Oil Co. reports for the quarter ended March 31, 1926, net income of $97,253 after interest, depreciation, depletion and Federal taxes, equivalent to 64 cents a share earned on 150,000 no par shares of stock. This compares with $456,547, or $3.04 a share, in the first quarter of 1925.

The income account for the quarter ended March 31, 1926, compares as follows:

	1926	1925
Sales of oil	$264,462	$936,198
Expenses	80,386	131,568
Balance	$184,076	$804,630
Other income	35,107	38,687
Total income	$219,183	$843,317
Interest	10,711	33,750
Depr., depl. and Fed. tax res.	111,129	353,020
Net income	$ 97,253	$456,547
Dividends	75,000	56,250
Surplus	$ 22,253	$400,297

The balance sheet of the Pennok Oil Corp. as of March 31, 1926, compares as follows:

Assets: Cash and collateral loans, $748,095; liberty bonds, $37,000; accounts and notes receivable, $81,629; inventories, $69,668; operated, unoperated leaseholds, equipment, etc, $2,300,011; insurance fund and deferred charges, $12,352; total, $3,248,755.

Liabilities: Accounts payable, $129,606; Federal taxes payable 1926, $97,920; gold notes, $646,600; reserve for depreciation, depletion, contingencies, etc., $1,589,200; capital and surplus, represented by 150,000 no par shares, $785,429;; total, $3,248,755.

Standard of New York

E. R. Brown, president of the Magnolia Petroleum Co., was recently elected vice president and director of the Standard Oil Co. of New York following the latter's absorption of Magnolia. At a meeting of the directors of the New York company today, John Barneson, president of General Petroleum Corp., was elected vice president and director. This followed the taking over of General Petroleum. B. H. Stevens was also elected to the board of directors of the Standard Oil Co. of New York.

NEW YORK STOCK EXCHANGE—LIST OF ACTIVE STOCKS

Stocks—	Par	Clos. Quot. May 28	Clos. Quot. May 24	1926 High	1926 Low	1925 High	1925 Low	1924 High	1924 Low
Amerada Corp.	..	27⅝	24¾	27⅝	21¾	..	..	..	..
Atlantic Ref., com.	100	124¼	128⅝	128⅝	97	117½	95⅛	140½	78⅛
Barnsdall "A"	25	26⅝	24⅞	33⅛	23½	33⅝	18¾	29⅜	14
California Pet., Com.	25	33	32⅝	38⅛	30⅝	34⅜	23⅞	29	19⅞
General Petroleum	25	65	51½	65⅝	51¼	59	42	45	38⅝
Houston Oil	100	62	58⅞	72	50¼	85	59	82½	61
Independent Oil & Gas	..	25¼	25	34	20¼	41⅜	13½	16¼	5⅜
Indian Refining	10	10	*9	13⅜	9⅛	14¼	5½	7	3⅜
Lago Oil & Trans.	..	23	21⅜	23	19¼	..	..	..	..
Louisiana Oil	10	17	15⅝	19⅝	12	23¾	13¾	..	..
Maracaibo	..	22½	22	28⅞	20¾	35½	20⅜	37⅛	25⅜
Marland	..	57½	56½	60¼	49¼	60⅛	32⅝	42	29
Mexican Seaboard	..	8⅛	8¼	12⅜	6	22½	9	25¾	14⅛
Mid-Continent Pet.	..	32⅞	31⅛	41	25⅝	38	25¾	40¼	22⅝
National Supply	50	60	*59	65⅞	55½	71	54⅜	72½	54
Oil Well Supply	25	30½	*30	36	30½	38	33⅜	..	..
Pan. Amer. P. & T., com.	50	71⅜	68½	76½	56⅛	83⅞	58½	65	44½
Pan. Amer., Western B.	..	38½	38¼	46	34	49¾	37¼	..	..
Phillips Pet.	..	46¼	45⅛	45⅝	42½	47⅛	36¼	42¼	28½
Producers & Refiners	50	14⅞	12¾	17½	11	32⅝	12½	43½	29⅜
Pure Oil, Com.	..	28¼	26⅞	31	26	33¾	25⅛	30¼	20
Royal Dutch, N. Y., sh.	13.40	53¼	52¼	57⅜	50	57⅜	48⅛	59½	40⅜
Shell Transport	10	*45	*44	48⅞	42	49	39⅜	42	33
Shell Union, com.	..	26⅛	25⅛	28⅛	24	28⅜	21⅝	22½	15⅜
Simms Pet.	10	19⅞	18⅞	28⅝	20⅜	28½	17⅜	24	10⅜
Sinclair Consolidated, com.	..	22⅞	22¼	24⅞	19⅝	24⅞	17	17½	15
Skelly Oil	25	34⅞	33⅞	34⅜	27	32½	21¾	29	17⅛
Standard of California	25	58⅝	55⅛	62¼	54	67¼	51½	68½	55½
Standard of New Jersey, com.	25	44⅞	44⅜	46⅜	40¼	47½	38⅜	41½	33
Sun Oil Co.	..	*32¼	32⅝	41⅝	31½	43⅞	38⅛	..	..
The Texas Company	25	53⅛	51⅜	54⅞	49	55	42¾	45⅝	37⅜
Texas Pacific Coal & Oil	10	14⅝	14¼	19½	12¼	23⅝	11	15¼	8⅛
Transcontinental	..	3¾	3⅝	4⅜	3	5⅞	3½	6¼	3⅜
Union Oil of California	25	44½	44⅜	49⅜	37¼	43⅜	33⅛	39	35½
Union Tank, com.	100	93½	*92	94	84¼	‡134	118	132⅞	94
White Eagle Oil & Refining	..	27⅞	26⅜	29¾	26¼	31¾	25⅝	29⅜	23⅛
Standard Oils									
Anglo-American Oil	£1	17½	*17¾	19¾	16½	26¾	17½	18¾	14⅝
Borne Scrymser	100	*225	*225	248	226	240	205	164	150
Buckeye Pipe Line	50	49½	51	59½	52	72	53½	85½	51
Chesebrough Mfg. Co.	25	*65½	66	72¾	63	74	48¼	52½	29¼
Continental	10	20⅞	20½	25⅞	19½	31⅛	21⅞	..	..
Crescent Pipe Line	25	*14	*14	16	14½	17½	10	20	11⅜
Cumberland Pipe Line	100	108	*115	137	108	156	128	148	108
Eureka Pipe Line	100	*51	52	63¾	47¾	96	61¼	105	74
Galena Signal, com.	100	20⅛	20	32½	17¼	68½	23½	69¾	62½
Humble Oil & Refining Co.	25	66¾	66¼	68⅛	52	99	42½	43¾	36
Illinois Pipe Line	100	133	141	144	134½	154½	124	161	123
Imperial Oil (Ltd.)	..	36⅞	36½	38¾	32½	39¼	27¼	119	99
Indiana Pipe Line	50	*64	*64	67	58	84	57⅛	100	66
International Pet. Co.	10	35	32¾	35¼	28¾	35⅜	22⅛	24¾	16⅞
National Transit Co.	12.50	*15½	*15½	20¾	15⅜	25½	16½	25⅞	20⅝
New York Transit	100	44½	44½	50	39	79	50	97	54½
Northern Pipe Line	100	*74	*74	80½	70⅝	88	67½	107½	72
Ohio Oil Co.	25	60	59	67¾	58	75¼	60	79½	53
Penn.-Mex Fuel	25	*18	*18	23	15	44	19	35⅝	27
Prairie Oil & Gas	25	55	54	60¼	48	65½	45¾	269	193
Prairie Pipe Line	100	125	124¼	127	122½	129¾	105	111	100
Solar Refining Co.	100	*194	194	212	191	259	200	240	170
South Penn Oil	25	38	38½	50	37½	‡197	139	176	117
Southwest Pa. Line	100	*50	*50	54½	47½	84	50	89	68
Southern Pipe Line	10	69¾	67½	74½	61½	103	63	100	80½
Standard of Indiana	10	64¾	63⅞	70½	61⅝	70¾	59½	69⅝	54½
Standard of Kansas	25	27¾	*26½	36½	25	46	30¼	50⅛	32½
Standard of Kentucky	25	121	119	134⅝	108	137	114¾	121⅞	101
Standard of Nebraska	100	50	*184	†51⅛	†42	270	231	262	198
Standard of New York	25	33¼	31⅛	47¼	31⅝	48⅝	40	48	37⅜
Standard of Ohio, com.	100	301	299	362	292½	369	338	337½	277
Swan & Finch, com.	25	*16	*16	21	18	27	12	28	20
Vacuum Oil	25	103½	103½	109⅜	94⅛	109½	80½	83½	50½
Miscellaneous									
Gulf Oil Corp. of Pa.	25	86	86	93¾	82½	98¼	63½	67⅜	56
Tide Water Associated	..	24½	23⅜	27	21	..	..	..	..

*Bid, no sales. ‡Old stocks. †New stocks.

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange was as follows:

May 28	59.81	Apr. 26	57.39	Mar. 22	56.96	
May 24	58.84	Apr. 19	55.63	Mar. 15	56.34	
May 17	57.63	Apr. 12	56.07	Mar. 8	55.02	
May 10	57.08	Apr. 5	56.78	Mar. 1	55.94	
May 3	57.23	Mar. 29	56.18	Feb. 20	54.23	

NORTH TEXAS MARKET INACTIVE DURING WEEK

WICHITA FALLS, Tex., May 29.—North Texas refined markets were inactive the past week with the trend to greater softness. There was practically no buying of any product, either for domestic or export consumption.

Prices on all products, however, were little changed. The U. S. Motor (58-60 437) gasoline still was not offered in great quantities below 11¾ cents. The 64-66 375 product continued to be held at 12¾ cents although it was more than plentiful at this figure.

The greatest softening was shown in natural gasolines, which, because of the warmer weather, manufacturers were more anxious to move than they have been for some time. Grade C was quoted as low as 9½ cents in some cases while the B grades were offered at 10 cents and the A grades at 10¼ cents.

Kerosene also continued to sag and the product which only a few weeks ago was so much in demand was beginning to become a drug on the market. Few quotations on 41-43 water white grade were below 9¾ cents but shoppers could buy under that figure.

Fuel oil was fairly firm in price due to recent buying of the city of Denver but the product was easily obtainable at the quoted market of $1.30 to $1.35. Gas oil, however, was soft at 3¾ cents and distillates at 4 cents, neither of the two latter products finding any mentionable market.

TENNESSEE HEARING DEFERRED

CHICAGO, May 29.—The hearing in the suit of the Tennessee Oil Men against the large distributing organization in the State has been deferred to July 19 at Chattanooga, Tenn. The case was to have come up for hearing on May 31. The temporary injunction is continued and the present 3-cent differential between the tankwagon and service station price remains in force.

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

GASOLINE AND NAPHTHA

	June 1		May 25		May 18	
OKLAHOMA (Group 3)—						
50-52 450 end point	.11¼	.11½	.11¼	.11½	.11	.11¼
56-58 450 end point	.11½	.11⅝	.11½	.11⅝	.11¾	.12
58-60 450 end point	.11⅝	.11¾	.11⅝	.11¾	.11⅞	.12
58 60 437 end point (U. S. Motor)	.11¾	.12	.11¾	.12	.12	
60-62 400 end point	.12	.12¼	.12	.12¼	.12¼	.12½
64-66 375 end point	.12¾	.13	.12¾	.13	.12¾	.13⅛
68-70 360 end point	.13¼	.13½	.13½	.13¾	.13½	.13¾
KANSAS—						
58-60 437 end point (U. S. Motor)	.12¼	.12½	.12¼	.12½	.12½	.12¾
NORTH TEXAS—						
48-50 450 end point (Naphtha)	.11	.11⅛	.11	.11⅛	.10⅝	.10¾
50-52 450 end point (Naphtha)	.11⅛	.11¼	.11⅛	.11¼	.10¾	.11¼
56-58 450 end point	.11¼	.11½	.11¼	.11½	.11⅝	.11⅞
58-60 437 end point (U. S. Motor)	.11¾	.12	.11¾	.11⅞	.11⅞	.12
60-62 400 end point	.12	.12⅛	.12	.12¼	.12⅛	.12¼
64-66 390 end point	.12¼	.12⅝	.12¼	.12½	.12½	.12¾
64-66 375 end point	.12¾	.12⅞	.12¾	.13⅛	.12¾	.13
68-70 360 end point	.13	.13¼	.13¼	.13½	.13¼	.13½
NORTH LOUISIANA—						
58-60 437 end point (U. S. Motor)	.12	.12¼	.12¼	.12½	.12¼	.12½
64-66 375 end point	.13	.13¼	.13	.13½	.13¼	.13½
ARKANSAS—						
58-60 450 end point	.12	.12⅛	.12	.12¼	.12¼	.12½
58-60 437 end point (U. S. Motor)	.12¼	.12½	.12¼	.12½	.12½	.12¾
64-66 375 end point	.13	.13¼	.13	.13¼	.13¼	.13½
ROCKY MOUNTAIN STATES—						
*58-60 437 end point (U. S. Motor)	.14¾	.15	.14¾	.15	.15	.15¼
PENNSYLVANIA—						
52 Naphtha	.13½	.13¾	.12½	.12¾	.12½	.12¾
54 Naphtha	.13¾	.14	.12¾	.13	.12¾	.13
56 Naphtha	.14	.14¼	.13¼	.13½	.13¼	.13½
58 Naphtha	.14½	.14¾	.13¾	.14	.13¾	.14
60 Gasoline	.14¾	.15	.14½	.14¾	.14½	.14¾
62 Gasoline	.15	.15¼	.15	.15¼	.15	.15¼
64 Gasoline	.15¼	.15½	.14¾	.15	.14¾	.15
66 Gasoline	.16	.16¼	.16	.16¼	.16	.16¼
68-70 Gasoline	.19½	.20	.19½	.20	.19½	.20
CALIFORNIA—						
54-58 437 end point (U. S. Motor) domestic	.12½	.13	.12½	.13	.12½	.13
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 end point (Naphtha)	.11⅜	.11½	.11¼	.11⅝	.11	.11¼
56-58 450 end point	.11½	.11⅝	.11½	.11⅝	.11¾	.12
58-60 437 end point (U. S. Motor)	.12		.11¾	.12	.12	.12¼
60-62 400 end point	.12¼	.12½	.12½	.12¾	.12½	.12¾
64-66 375 end point	.12¾	.13	.13	.13¼	.13	.13¼
68-70 360 end point	.13¼	.13½	.13½	.14	.13½	.13¾

*Colorado points.

NATURAL GASOLINE

	June 1		May 25		May 18	
OKLAHOMA (Group 3)—						
Grade AA, 80-87.9, 375 e.p., rec. 90%	.10¼	.10⅜	.10½	.10⅝	.10¾	.11
Grade A, 72-79.9, 375 e.p., rec. 90%	.10¼	.10⅜	.10½	.10⅝	.10¾	.11
Grade BB, 84-92, 375 e.p., rec. 85%	.10	.10¼	.10¼	.10⅜	.10½	.10¾
Grade B, 76-83.9, 375 e.p., rec. 85%	.10	.10¼	.10¼	.10⅜	.10½	.10¾
Grade C, 80-90, 375 e.p., rec. 78%	.09¾		.09¾	.10	.10¼	.10½
NORTH TEXAS—						
Grade AA, 80-87.9, 375 e.p., rec. 90%	.10¼	.10⅜	.10½		.10¾	.11
Grade A, 72-79.9, 375 e.p., rec. 90%	.10¼	.10⅜	.10½		.10¾	.11
Grade BB, 84-92, 375 e.p., rec. 85%	.10	.10¼	.10¼		.10½	.10¾
Grade B, 76-83.9, 375 e.p., rec. 85%	.10	.10¼	.10¼		.10½	.10¾
Grade C, 80-90, 375 e.p., rec. 78%	.09⅝	.09¾	.09⅝	.10	.10¼	.10½
NORTH LOUISIANA—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.10¾	.11	.11	.11¼	.11½	.11¾
Grade B, 76-83.9, 375 e.p., rec. 85%	.10½	.10¾	.10½	.10¾	.10¾	.11
Grade C, 80-90, 375 e.p., rec. 78%	.10¼	.10½	.10¼	.10½	.10½	.10¾
CALIFORNIA—						
78-85 absorption, 360-390 end point	.15½	.16	.15½	.16	.15½	.16
78-84 compression, 350 end point	.15½	.16	.15½	.16	.15½	.16
CHICAGO DISTRICT (Based on Group 3)—						
Grade AA, 80-87.9, 375 e.p., rec. 90%	.10¼	.10½	.10¾	.11	.11	
Grade A, 72-79.9, 375 e.p., rec. 90%	.10¼	.10½	.10¾	.11	.11	
Grade BB, 84-92, 375 e.p., rec. 85%	.10	.10¼	.10¼	.10½	.10½	.10¾
Grade B, 76-83.9, 375 e.p., rec. 85%	.10	.10¼	.10¼	.10½	.10½	.10¾
Grade C, 80-90, 375 e.p., rec. 78%	.09¾	.10	.10	.10¼	.10¼	.10½

MOTOR NATURAL GASOLINE (BLENDS)

	June 1		May 25		May 18	
OKLAHOMA (Group 3)—						
60-62 450 end point	.11½	.11⅝	.11½	.11⅝	.11½	.11⅝
64-66 437 end point	.11½	.11⅝	.11½	.11⅝	.11½	.11⅝
NORTH TEXAS—						
64-66 437 end point	.11⅜	.11½	.11½		.11½	.12
PENNSYLVANIA—						
*60-62	.13¾	.14	.12¾	.13	.12¾	.13
*64-66	.14	.14¼	.13	.13¼	.13	.13¼
*66-68	.14	.14¼	.13	.13¼	.13	.13¼
*68-70	.14¼	.14½	.13¼	.13½	.13¼	.13½
CHICAGO DISTRICT (Based on Group 3)—						
60-62 450 end point	.11¼	.11⅝	.11¼	.11¾	.11¼	.11½
64-66 437 end point	.11½	.11⅞	.11½	.12	.11½	

*At Sistersville, W. Va.

BURNING OIL

	June 1		May 25		May 18	
KANSAS—						
41-43 water white Kerosene	.10⅛	.10¼	.10⅜	.10½	.10¾	.11¼
OKLAHOMA (Group 3)—						
41-43 water white Kerosene	.09⅞	.10	.10		.10½	.10⅝
42-44 water white Kerosene	.10⅛	.10⅜	.10¼	.10½	.10¾	
NORTH LOUISIANA—						
41-43 prime white Kerosene	.10	.10¼	.10¼	.10½	.10½	.10¾
ROCKY MOUNTAIN STATES—						
*40-41 water white Kerosene	.12⅞	.13	.13	.13¼	.13½	.13⅝
NORTH TEXAS—						
41-43 water white Kerosene	.09½	.09¾	.09⅞	.10	.10¼	.10½
ARKANSAS—						
41-43 water white Kerosene	.10¼	.10½	.10½	.10¾	.10½	.10¾
PENNSYLVANIA—						
43 Kerosene prime white	.12	.12¼	.11¾	.12	.11¾	.12
45 Kerosene water white	.12¼	.12½	.12¼	.12½	.12¼	.12¼
46 Kerosene water white	.12¾	.13	.12½	.12¾	.12½	.12¾
47 Kerosene water white	.13½	.13¾	.12¾	.13	.12¾	.13
34 Neutral	.08	.08¼	.08	.08¼	.08	.08¼
34 Sundebloom Neutral	.09	.09¼	.09	.09¼	.09	.09¼
36 Miners' Neutral	.07¼	.07½	.07¼	.07½	.07¼	.07½
300 Mineral Seal	.08½		.09	.09¼	.09	.09¼
CALIFORNIA—						
38-40 water white (high burning test)	.07½	.08½	.07½	.08½	.07½	.08¼
Engine distillate, 43-45 445 end point	.10¼	.10½	.10¼	.10½	.10¼	.10½
Engine distillate, 42-44 450 end point	.10	.10¼	.10	.10¼	.10	.10¼
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white Kerosene	.10	.10¼	.10	.10½	.10½	.10¾
42-44 water white Kerosene	.10¼	.10½	.10½	.10¾	.10¾	.11

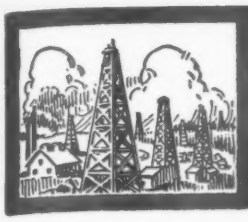
*Colorado points.

FUEL OILS

	June 1		May 25		May 18	
KANSAS—						
24-26 Fuel Oil	1.35		1.35	1.40	1.40	1.45
32-36 Gas Oil	.04¼	.04⅜	.04¼	.04⅜	.04⅜	.04½
38-40 Distillate	.04½	.04⅝	.04½	.04¾	.04¾	.05¼
OKLAHOMA (Group 3)—						
Below 22 Fuel Oil (sellers' cars)	1.22½	1.25	1.22½	1.25	1.25	
22-26 Fuel Oil (sellers' cars)	1.25	1.27½	1.25	1.27½	1.27½	1.30
24-26 Fuel Oil (sellers' cars)	1.27½	1.32½	1.30	1.32½	1.35	
26-30 Fuel Oil (sellers' cars)	1.35	1.37½	1.35	1.40	1.40	
28-30 Fuel Oil (sellers' cars)	1.45		1.45	1.47½	1.45	1.50
32-36 Gas Oil (cracking stock)	.04⅛	.04¼	.04⅛	.04¼	.04¼	
36-38 Distillate	.04¼	.04⅜	.04¼	.04⅜	.04½	.04⅝
38-40 Straw Distillate	.04⅜	.04⅝	.04⅜	.04⅝	.04⅝	.05
NORTH TEXAS—						
24-26 Fuel Oil (sellers' cars)	1.30	1.35	1.30	1.35	1.25	1.30
32-36 Gas Oil (straw)	.03¾	.04	.03¾	.04	.03⅞	.04
38-40 Straw Distillate	.04	.04¼	.04	.04¼	.04⅜	.04½
NORTH LOUISIANA—						
18-20 Fuel Oil	1.25	1.30	1.20	1.25	1.25	1.30
32-36 Gas Oil	.04	.04¼	.04¼	.04½	.04	.04¼
36-38 Distillate	.04½	.04¾	.04½	.04¾	.04⅝	.04¾
ARKANSAS—						
38 40 Distillate	.04⅝	.04¾	.04⅝	.04¾	.04¾	.05
32-36 Gas Oil	.04⅛	.04⅜	.04¼	.04⅜	.04⅜	.04½
16-20 Refinery Fuel Oil	1.17½	1.20	.120		1.20	1.22½
GULF COAST (South Texas)—						
Gas Oil	.05½	.05¾	.05½	.05¾	.05	.05¼
Fuel Oil	1.75	1.85	1.75	1.85	1.65	1.70
PENNSYLVANIA—						
30-34 Fuel Oil	.06¼	.06½	.06¼	.06½	.06¼	.06½
36-40 Fuel Oil	.07	.07¼	.07	.07¼	.07	.07¼
CALIFORNIA—						
33-35 Distillate	.04¾	.05	.04¾	.05	.04¾	.05
27-35 Distillate	.04	.04½	.04	.04½	.04	.04½
15-20 Fuel Oil (at tide water)	1.00	1.04	1.00	1.04	1.00	1.04
27 plus Diesel	1.15	1.19	1.15	1.19	1.15	1.19
CHICAGO DISTRICT (Based on Group 3)—						
24-26 Fuel Oil (sellers' cars) Group 3	1.30	1.35	1.32½	1.35	1.35	
22-26 Fuel Oil (sellers' cars)	1.27½	1.30	1.27½	1.30	1.32½	1.35
18-22 (El Dorado)	1.25	1.27½	1.20	1.25	1.27½	1.30
18-20 (Smackover)	1.20	1.22½	1.15	1.20	1.15	
32-36 Gas Oil	.04	.04¼	.04⅛	.04⅜	.04¼	.04½
36-38 Distillate	.04¼	.04⅜	.04¼	.04½	.04¾	.05
38-40 Straw Distillate	.04⅜	.04½	.04½	.04¾	.05	.05¼

LUBRICATING OILS AND WAX

	June 1		May 25		May 18	
OKLAHOMA (Group 3)—						
70-80 vis., 2½ color, 20-25 cold test	.06	.07	.06	.07	.06	.07
100 vis., 3 color, 20-25 cold test	.06½	.07	.06½	.07	.06½	.07
100 vis., 2 color, 20-25 cold test	.07	.07½	.07	.07½	.07	.07½
150 vis., 4 color, 20-25 cold test	.09¼	.09¾	.09¼	.09¾	.09¼	.09¾
150 vis., 3 color, 20-25 cold test	.09½	.10	.09½	.10	.09½	.10
180 vis., 4 color, 23-28 cold test	.10	.10½	.10	.10½	.10	.10½
180 vis., 3 color, 23-28 cold test	.10¼	.10½	.10¼	.10½	.10¼	.10½
200 vis., 4 color, 23-28 cold test	.11	.11½	.11	.11½	.11	.11½
200 vis., 3 color, 23-28 cold test	.11¼	.11½	.11¼	.11½	.11¼	.11½
220 vis., 4 color, 25-30 cold test	.14	.14½	.14	.14½	.14	.14½
220 vis., 3 color, 25-30 cold test	.14½	.15	.14½	.15	.14½	.15
240 vis., 4 color, 25-30 cold test	.14	.14½	.14	.14½	.14	.14½
240 vis., 3 color, 25-30 cold test	.14½	.15	.14½	.15	.14½	.15
280 vis., 4 color, 25-30 cold test	.15½	.16	.15½	.16	.15½	.16
280 vis., 3 color, 25-30 cold test	.16½	.17	.16½	.17	.16½	.17
180 vis., 5 color, 23-28 cold test	.09¾	.10¼	.09¾	.10¼	.09¾	.10¼
200 vis., 5 color, 23-28 cold test	.10¾	.11¼	.10¾	.11¼	.10¾	.11¼
220 vis., 5 color, 25-30 cold test	.14	.14½	.14	.14½	.14	.14½
240 vis., 5 color, 25-30 cold test	.13	.14	.13	.14	.13	.14
280 vis., 5 color, 25-30 cold test	.15½	.16	.15½	.16	.15½	.16
Cylinder Stocks:						
180-200 vis., S. R. green, 40-45 cold test	.08½	.11	.08½	.11	.08½	.11
190-200 vis., S. R. green, 40-45 cold test	.08	.08½	.08	.08½	.08	.08½
170-190 dark green, 40-45 cold test	.06	.06½	.06	.06½	.06	.06½
190-200 vis. @ 210 "D" Bright Stock	.33	.35	.33	.35	.33	.35
200-210 vis. @ 210 "E" Bright Stock	.30	.31	.30	.31	.30	.31
150 vis. @ 210 "E" Bright Stock	.27	.28	.27	.28	.27	.28
150 vis. @ 210 "D" Bright Stock	.28	.31	.28	.31	.28	.31
Waxes:						
122-124 White Crude Scale Wax	.04¾	.04⅞	.04¾	.04⅞	.04¾	.04⅞
PENNSYLVANIA—						
150, 3 color	.25½		.25½		.24½	
180, 3 color	.27½		.27½		.27	
200, 3 color	.29½		.29½		.31	
220, 3 color	.30		.30		.30	
600, steam refined	.15¾		.15¾		.15¾	
635, steam refined	.20		.19½		.19½	



REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

650, steam refined	.21		.20½		.20½	
600, Pennsylvania flash	.26½		.26½		.26½	
630, Pennsylvania flash	.34		.34		.34	
*550, E filtered	.19½		.19½		.19½	
600, E filtered	.20¼		.20		.20	
*600, E filtered	.21¼		.21¼		.21¼	
600, D filtered	.26¾		.26¾		.26¾	
550, E filtered	.18½	.18¾	.18½	.18¾	.18½	.18¾
550, D filtered	.22¼	.22½	.22¼	.22½	.22¼	.22½
Pennsylvania Bright Stock	.40		.40		.40	
122-124 White Crude Scale Wax	.05⅛	.05¼	.05⅛	.05¼	.05⅛	.05¼
†124-126 White Crude Scale Wax	.05¼	.05⅜	.05¼	.05⅜	.05¼	.05⅜

*At Warren, Pa. †At New York City.

GULF COAST (South Texas)—						
Zero Black	.06	.07	.06	.07	.06	.07
No. 2 color, 100 vis., pale oil	.08	.08½	.08	.08½	.07½	.08
No. 3 color, 200 vis., pale oil	.12	.12½	.12	.12½	.11	.11½
No. 3½ color, 300 vis., pale oil	.13½	.14	.13½	.14	.13	.13½
No. 3¾ color, 500 vis., pale oil	.15½	.16	.15½	.16	.15	.15½
No. 4 color, 750 vis., pale oil	.19½	.20½	.19½	.20½	.18½	.19½
No. 2 plus color, 200 vis., pale filtered	.22		.22		.22	
No. 2 color, 300 vis., pale filtered	.25		.25		.25	
No. 2½ color, 500 vis., pale filtered	.28		.28		.28	
No. 2½ color, 750 vis., pale filtered	.36		.36		.36	
No. 5 to 6 color, 200 vis., red oil	.10	.10½	.10	.10½	.09½	.10
No. 5 to 6 color, 300 vis., red oil	.12	.12½	.12	.12½	.11½	.12
No. 5 to 6 color, 500 vis., red oil	.13½	.14	.13½	.14	.13	.13½
No. 5 to 6 color, 750 vis., red oil	.17½	.18½	.17½	.18½	.17	.18
CALIFORNIA—						
130 pale, 2½-3 color	.10	.11½	.10	.11½	.10	.11½
200 vis., 2½-3 color	.13½	.14½	.13½	.14½	.13½	.14½
300 vis., 3 -3½ color	.15	.16	.15	.16	.15	.16
350 vis., 3½-4 color	.16½	.17½	.16½	.17½	.16½	.17½
400 vis., 3½-4 color	.18	.19	.18	.19	.18	.19
Red Neutrals:						
200 vis., 4½-5 color	.12	.13	.12	.13	.12	.13
300 vis., 5 -6 color	.13	.14	.13	.14	.13	.14
400 vis., 5 -6 color	.15	.16	.15	.16	.15	.16
500 vis., 4½ 5 color	.18	.19	.18	.19	.18	.19
500 vis., 6 -6½ color	.16	.17	.16	.17	.16	.17
600 vis., 6½ plus color	.17	.18	.17	.18	.17	.18

Note: Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK DOMESTIC MARKET

Bayonne Refinery Prices:	June 1	May 25	May 18
U. S. Motor Gasoline, 58-60 437	.15	.15	.14
*Bunker Oil, 14-16 Be.	1.75	1.75	1.75
*Diesel Oil, New York City	2.41½	2.41½	2.41½
Furnace Oil, New York City	.11	.11	.11
Gas Oil, 28 plus	.06½	.06½	.06½
41-43 Kerosene prime white	.09¼	.09¼	.09¼

*Lighterage 6.5c a barrel extra.

NEW YORK EXPORT PRICES

Motor Gasoline:	June 1	May 25	May 18
58-60 Be. gravity, in cases	.20.40	.29.40	.28.90
Standard white Kerosene, in cases	.19.15	.19.15	.19 15
Water white Kerosene, in cases	.20.40	.20.40	.20.40
Export Gasoline, 64-66 Be.	.17	.17	.16
†Lubricating Oils (in bulk):			
Cylinder Stock, light filtered, 60 s.r.	.29	.29	.29
No. 5 Bright Stock, .897 spec. grav.	.41	.40	.40
No. 1 White Neutral, .878 spec. grav.	.37	.35	.35
Pale Oil "25" .898 spec. grav.	.13	.12	.12
Pale Oil, "28" .892 spec. grav.	.08	.07½	.07½
No. 3 red oil, 160 vis., 7 color	.11	.10¾	.10¾
No. 2 red oil, .903 spec. grav.	.12	.11½	.11½
No. 1 red oil, .905 spec. grav., 265 vis.	.13½	.13	.13
Polar red oil, .903 spec. grav., 295 vis.	.14	.13½	.13½
Paraffin Wax:			
120-122 a.m.p., per lb.	.06	.05⅞	.05⅞
125-127 a.m.p., per lb.	.06⅛	.06	.06
130-132 a.m.p., per lb.	.06½	.06¼	.06¼
135-137 a.m.p., per lb.	.07	.06⅞	.06⅞
Petrolatum, in bbls., car load lots, per lb.:			
Amber	.03¼	.03¼	.03¼
Light amber	.03½	.03½	.03½
Cream	.05½	.05½	.05½
Lily white	.08	.08	.08
Snow white	.09¼	.09¼	.09¼

†All lub prices in barrels.

LOS ANGELES EXPORT PRICES

	June 1		May 25		May 18	
Kerosene water white	.05½	.06½	.05½	.06½	.05½	.06½
U. S. Motor Gasoline, 54-56 437 e.p.	.11	.11¼	.11	.11¼	.11	.11¼

CRUDE OIL PRICES

OKLAHOMA, KANSAS AND NORTH TEXAS

***Prairie Oil & Gas Co.**
(Oklahoma, Kansas and North and East Central Texas)

28° to 28.9°	$1.65
29° to 29.9°	1.73
30° to 30.9°	1.81
31° to 31.9°	1.89
32° to 32.9°	1.97
33° to 33.9°	2.05
34° to 34.9°	2.13
35° to 35.9°	2.21
36° to 36.9°	2.29
37° to 37.9°	2.37
38° to 38.9°	2.45
39° to 39.9°	2.53
40° to 40.9°	2.61
41° to 41.9°	2.69
42° to 42.9°	2.77
43° to 43.9°	2.85
44° to 44.9°	2.93
45° to 45.9°	3.01
46° to 46.9°	3.09
47° to 47.9°	3.17
48° to 48.9°	3.25
49° to 49.9°	3.33
50° to 50.9°	3.41
51° to 51.9°	3.49
52° and above	3.57

*Other major purchasers except as noted below.

Champlin Refining Co.
(Garber and Tonkawa)

Schedule based on Prairie Oil & Gas Co. paying 10 cents additional for each grade of crude above 38° gravity.

Humble Oil & Refining Co.
(North and East Central Texas, Ranger, Mexia, Powell, Richland, Wortham, Currie, Moran, Big Lake and Lytton Springs)

Same prices as Prairie Oil & Gas Co. schedule.

Magnolia Petroleum Co.
(Oklahoma, Kansas and North and East Central Texas, except Corsicana heavy, and Lytton Springs of South Central Texas)

Below 28°	1.30

Other grades same as Prairie Oil & Gas Co.

Iatan	$1.15
Corsicana heavy	1.25

(Panola County)

34° to 34.9°	$1.95
35° to 37.9°	2.10
38° and above	2.25

Texhoma Oil & Refining Co.
(Wichita Falls, Tex., District)

Below 32°	1.94
32° to 32.9°	2.02
33° to 33.9°	2.10
34° to 34.9°	2.18
35° to 35.9°	2.26
36° to 36.9°	2.34
37° to 37.9°	2.42
38° to 38.9°	2.50
39° to 39.9°	2.60
40° to 40.9°	2.66
41° to 41.9°	2.74
42° to 42.9°	2.82
43° to 43.9°	2.90
44° and above	2.98

TEXAS PANHANDLE

Kay County Gas Co.
Magnolia Petroleum Co.

28° to 28.9°	$1.35
29° to 29.9°	1.40
30° to 30.9°	1.45
31° to 31.9°	1.50
32° to 32.9°	1.55
33° to 33.9°	1.60
34° to 34.9°	1.65
35° to 35.9°	1.70
36° to 36.9°	1.75
37° to 37.9°	1.80
38° to 38.9°	1.85
39° and above	1.90

GULF COAST

***Humble Oil & Refining Co.**

Grade A	$1.60
Grade B—	
Below 25°	1.50
25° to 25.9°	1.55
26° to 26.9°	1.60
27° to 27.9°	1.65
28° to 28.9°	1.70
29° to 29.9	1.75
30° to 30.9°	1.80
31° to 31.9°	1.85
32° to 32.9°	1.90
33° to 33.9°	1.95
34° to 34.9°	2.00
35° and above	2.05
Sour Lake (36° gravity) (The Texas Company)	1.79
Boling	1.50
High Island	1.40

*And other major purchasers, including The Texas Company, and the Sun Oil Co. High Island crude posted by the Sun Oil Co.

SOUTH CENTRAL AND SOUTHWEST TEXAS

***Magnolia Petroleum Co.**

Luling (contract)	$1.30
Mirando (Webb, Jim Hogg and Zapata Counties)	1.25
Rockdale-Minerva (Milam County)	1.25
Thrall	1.00
Callihan (Live Oak and McMullen Counties)	1.75
§Lockhart (Lytton Springs)	

Somerset (Grayburg Pipe Line Co.)

28° to 28.9°	1.25
29° to 29.9°	1.35
30° to 30.9°	1.71
31° to 31.9°	1.89
32° to 32.9°	1.97
33° to 33.9°	2.05
34° to 34.9°	2.13
35° to 35.9°	2.20
36° to 36.9°	2.29
37° to 37.9°	2.37
38° and above	2.45

*Texpata Pipe Line Co. and Humble Pipe Line Co. also posts in Mirando Field paying same prices as Magnolia Petroleum Co.

§Lockhart prices same as for North and East Central Texas. Lockhart posted by Magnolia Petroleum Co. and Humble Oil & Refining Co.

ARKANSAS AND NORTH LOUISIANA

Standard Oil Co. of Louisiana

Caddo below 32°	2.10
32° to 34.9°	2.25
35° to 37.9°	2.35
38° and above	2.45
Homer Below 31°	1.85
31° to 32.9°	2.00
33° to 34.9°	2.10
35° and above	2.20
Haynesville below 33°	2.00
33° and above	2.10
El Dorado below 33°	2.00
33° to 34.9°	2.10
35° to 36.9°	2.20
37° and above	2.30
Bull Bayou, 32° to 34.9°	1.95
35° to 37.9°	2.10
38° and above	2.25
Cotton Valley	1.20
DeSoto	2.30
Crichton	2.10
Bellevue	1.50
Smackover, below 24°	1.10
24° to 24.9°	1.35
25° to 25.9°	1.40
26° to 26.9°	1.45
27° and above	1.50
*Stephens, Ark, below 26°	1.45
26° and above	1.65
†Calion (East El Dorado)	.95
§Urania	1.15

Other companies posting in these fields are: Gulf Pipe Line Co.; Atlantic Oil Producing Co. in Homer, Haynesville, El Dorado and Smackover; The Texas Company in Caddo, Bull Bayou, DeSoto, Crichton and Smackover.

*Posted by the Atlantic Oil Producing Co. †Posted by the Gulf Pipe Line Co. §Posted by the Louisiana Oil Refininig Corp.

ROCKY MOUNTAIN STATES

Ohio Oil Co.—Midwest Refining Co.

Rock Creek, (Wyo.)	$2.25
Salt Creek—	
29° to 29.9°	1.73
30° to 30.9°	1.81
31° to 31.9°	1.89
32° to 32.9°	1.97
33° to 33.9°	2.05
34° to 34.9°	2.13
35° to 35.9°	2.21
36° to 36.9°	2.29
37° and above	2.37
Big Muddy	2.25
Mule Creek	1.75
Grass Creek, light	2.40
Grass Creek, heavy	.90
Elk Basin	2.40
Lance Creek	2.40
Rex Lake	1.45
Osage	2.40
Lost Soldier (contract)	1.35
Greybull-Torchlight	2.15
Hamilton Dome	1.35
Cat Creek (Mont.)	2.40
Sunburst (Mont.)	1.05
Florence (Colo.)	1.60
Artesia	1.95
Hogback (N. M.)	2.45

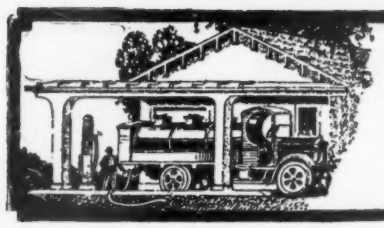
Note: Salt Creek, Osage, Cat Creek, Greybull and Hogback posted by Midwest Refining Co., and the remainder by the Ohio Oil Co. Both companies post Grass Creek light and Elk Basin.

EASTERN STATES

Joseph Seep Purchasing Agency

Penna Grade Oil in New York Transit Lines (New York)	$3.65
Bradford District Oil in National Transit Lines (Pennsylvania)	3.65
Penna Grade Oil in National Transit Lines (Pennsylvania)	3.55

(Continued on Page 152)



TANK WAGON MARKETS

Tankwagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns, June 1.

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

Main Service Station Price

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Inclds tax of	Kero. Tank wagon
Chicago Dist.—				
†Less than 100 gals.	19.0	21.0	...	15.5

Tank wagon prices on April 19, 1922; g. up 1½c; May 8, up 1c; June 27, g. and k. up 1c; July 19, g. down 2c, k. down 1c; Oct. 10, g. down 2c; Oct. 21, g. down 1c; Feb. 5, 1923, g. up 1c; Feb. 20, g. up 1c; Aug. 14, g. down 6.6c; Oct. 4, k. down 1½c; Nov. 10, g. down 1.4c; Dec. 20, g. up 2c; Jan. 12, 1924, g. up 2c; k. up 1c; Feb. 5, g. up 2c, k. 1c; July 18, g. down 1c; July 30, g. and k. down 1c; Sept. 12, g. down 2c; Jan. 23, 1925, g. up 1c; Jan. 26, g. up 1c; Jan. 31, g. up 1c; Feb. 12, g. up 2c, k. up 1c; April 19, g. down 1c; July 14, g. up 1c; Aug. 25, g. down 2c, k. down 1c; Sept. 1, g. down 1c; Feb. 4, 1926, g. up 1c, k. up 1c; April 16, 1926, k. up 1c; April 24, 1926, k. up ½c; April 29, 1926, g. up 1c, k. up ½c; May 6, 1926, k. up ½c May 17, g. and k. up 1c.

Decatur, Ill.	19.2	21.2	...	16.0
East St. Louis	18.1	20.35	...	15.1
Joliet	19.4	21.4	...	16.2
Peoria	19.2	21.2	...	16.0
Quincy	19.2	21.2	...	15.8
Davenport, Ia.	21.5	23.5	2.0	16.4
Des Moines	21.5	23.5	2.0	16.4
Keokuk	21.5	23.5	2.0	16.4
Sioux City	21.0	23.0	2.0	16.0
Duluth, Minn.	22.5	24.5	2.0	17.1
Minneapolis	22.2	24.2	2.0	17.1
La Crosse, Wis.	22.2	24.2	2.0	16.9
Milwaukee	21.1	23.1	2.0	15.8
Madison	21.3	23.3	2.0	16.0
Detroit, Mich.	21.8	23.8	2.0	16.7
Grand Rapids	21.7	23.7	2.0	16.6
Saginaw	21.9	23.9	2.0	16.8
Evansville, Ind.	22.0	24.0	3.0	16.6
Fort Wayne	22.4	24.4	3.0	16.4
Indianapolis	22.2	24.2	3.0	16.2
South Bend	22.4	24.4	3.0	16.4
Fargo, N. D.	22.9	24.9	1.0	19.1
Huron, S. D.	23.5	25.5	3.0	17.6
Sioux Falls	22.3	24.3	3.0	17.1
*K. C. Mo.	21.9	23.9	3.0	14.8
*Springfield	21.8	23.8	3.0	15.7
*St. Louis	20.6	22.9	2.5	15.5
*St. Joseph	21.0	23.0	2.5	15.4
‡Wichita, Kan.	19.8	21.8	2.0	15.4
Bartlesville, Ok.	20.8	22.8	3.0	15.3
Alexandria	20.0	23.0	2.0	16.0
Baton Rouge	19.0	22.0	2.0	14.5
LaFayette	20.0	23.0	2.0	15.5
Lake Charles	20.5	23.5	2.0	16.0
Shreveport, La.	19.0	22.0	2.0	15.0
Memphis, Tenn.	21.5	24.5	3.0	17.0
Chattanooga	23.5	26.5	3.0	17.5
Knoxville	23.5	26.5	3.0	18.0
Nashville	22.5	25.5	3.0	18.0
Bristol	24.0	27.0	3.0	17.5
Little Rock, Ark	22.0	25.0	4.0	16.5

*Tax of 3 cents includes city tax of 1 cent.

*State tax is 2c. Remainder is city tax.
†Quantity price on more than 100 gallons, 18.0.
‡At all Kansas points a discount of 1 cent a gallon is allowed from the tank wagon postings on dumps of 50 gallons or more.

The following monthly rebate system is effective on tank wagon schedules throughout the territory of Standard Oil Co. of Indiana: Over 750 gallons, ½c; over 2,000 gallons, ¾ cent; over 3,000 gallons, 1 cent; over 6,000 gallons, 1½ cents; over 10,000 gallons, 2 cents. If quantity bought during the year is equal to 12 times the monthly agreed purchases the discount will be paid or credited on the entire quantity less monthly payments. Service station customers will receive discount of 1 cent a gallon on purchases amounting to 200 gallons a month or 2,400 gallons a year; and 2 cents a gallon on 600 gallons a month or 7,200 gallons a year.

SOUTHWESTERN DISTRICT

***Magnolia Petroleum Co.**

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Inclds tax of	Kero. Tank wagon
Dallas, Tex.		20.0	1.0	15.0
Fort Worth		20.0	1.0	15.0
Houston		20.0	1.0	15.0
San Antonio		20.0	1.0	15.0
El Paso		21.0	1.0	16.0
Texarkana, Tex.		20.5	1.0	15.0
Muskogee, Ok.	19.0	22.0	3.0	16.0
Oklahoma City	19.0	22.0	3.0	16.0
Tulsa	19.0	23.0	3.0	16.0
Little Rock	21.0	24.0	4.0	16.5
Ft. Smith, Ark.	21.0	24.0	4.0	16.5

*The following is the schedule of discounts on quantity gasoline sales adopted by the Magnolia Petroleum Co. in Oklahoma: Over 750 gallons a month, ½ cent; over 2,000 gallons, ¾ cent; over 3,000 gallons, 1 cent; over 4,500 gallons, 1¼ cents; over 6,000 gallons, 1½ cents; over 8,000 gallons, 1¾ cents; over 10,000 gallons, 2 cents. If the quantity bought during the year is 12 times the monthly agreed purchases, the discount will be paid or credited on the entire quantity for the year less any monthly purchases.

The schedule on service station deliveries is: Over 200 gallons a month, 1 cent; over 300 gallons a month, 1½ cents; over 400 gallons, 1¾ cents; over 500 gallons, 1¾ cents; over 600 gallons, 2 cents. The same rule applies for annual purchases as in the tank wagon discounts.

In Texas a flat 3-cent discount only from the retail schedule is allowed dealers and large consumers. There is no tankwagon schedule.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Inclds tax of	Kero. Tank wagon
*New Orleans	20.5	23.5	3.0	15.0

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Inclds tax of	Kero. Tank wagon
Atlanta, Ga.	25.0	28.0	3.5	20.0
Augusta	25.0	28.0	3.5	20.0
Macon	25.0	28.0	3.5	20.0
Savannah	23.0	25.0	3.5	18.0
Birm'gham, Ala	22.0	25.0	2.0	19.5
Mobile	21.0	24.0	2.0	18.0
*Montgomery	23.0	26.0	3.0	20.5
Clarksdale, Miss	23.0	26.0	4.0	17.5
Jackson	23.0	26.0	4.0	16.5
Natchez	22.5	25.5	4.0	17.0
Vicksburg	22.5	25.5	4.0	17.0
Jack'ville, Fla.	23.0	26.0	4.0	18.0
Miami	25.0	28.0	4.0	19.5
Pensacola	23.0	25.0	4.0	18.5
Tampa	23.0	26.0	4.0	18.0
Covington	24.0	27.0	5.0	19.0
Louisville	25.0	28.0	5.0	18.0
Lexington, Ky.	25.0	28.0	5.0	19.0

*In addition to the state tax of 2 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and ½ cent on kerosene.

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Inclds tax of	Kero. Tank wagon
Atlantic City	19.0	...	...	16.0
Newark, N. J.	19.0	21.0	...	16.0
Anapolis, Md.	21.0	...	2.0	16.0
Baltimore	21.0	24.0	2.0	16.0
Cumberland	21.0	24.0	2.0	16.0
Washington	21.0	24.0	2.0	16.0
Danville, Va.	23.5	....	4.5	16.0
Norfolk	23.5	26.5	4.5	16.0
Petersburg	23.5	26.5	4.5	16.0
Roanoke	23.5	26.5	4.5	16.0
Richmond	23.5	26.5	4.5	16.0
Charleston, W. Va.	22.5	25.5	3.5	16.0
Keyser	22.5	....	3.5	16.0
Parkersburg	22.5	25.5	3.5	16.0
Wheeling	22.5	25.5	3.5	16.0
Charlotte, N. C.	23.5	26.5	4.0	16.0
Hickory	22.5	....	4.0	16.0
Mt. Airy	23.5	26.5	4.0	16.0
Salisbury	23.5	26.5	4.0	16.0
Charleston, S.C.	24.5	27.5	5.0	16.0
Columbia	24.5	27.5	5.0	16.0

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Inclds tax of	Kero. Tank wagon
Albany, N. Y.	21.0	....	...	17.0
*New York	21.0	....	...	17.0
Buffalo	21.0	....	...	17.0
Rochester	21.0	....	...	17.0
Syracuse	21.0	....	...	17.0
Boston, Mass.	21.0	....	...	17.0
Providence, R.I.	22.0	....	1.0	17.0
Augusta, Me.	24.0	....	3.0	17.0
Manchester, N. H.	23.0	....	2.0	17.0
Burlington, Vt.	23.0	....	2.0	17.0

*Price in steel barrels.
Note: Standard Oil Co. of New York does not generally quote service station price in its territory. In most cases the service station price is 2 or 3 cents higher than tank wagon price.

PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND

Atlantic Refining Co.

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Inclds tax of	Kero. Tank wagon
*Pittsburgh, Pa.	20.0	25.0	...	17.0
*Philadelphia	20.0	25.0	...	17.0
*Scranton	20.0	25.0	...	17.0
*Allentown	20.0	25.0	...	17.0
Altoona	20.0	25.0	...	17.0
*Erie	20.0	25.0	...	17.0
Dover, Del.	22.0	25.0	2.0	17.0
Wilmington	22.0	25.0	2.0	17.0
Springf'd, Mass.	21.0	23.0	...	17.0
Worcester	21.0	24.0	...	17.0
Boston	21.0	24.0	...	17.0
Providence, R.I.	22.0	24.0	1.0	17.0
Hartford, Conn.	23.0	26.0	2.0	16.0
New Haven	23.0	26.0	2.0	17.0

*Pennsylvania tax of 2 cents is collected by the dealer and paid by him direct to the State.

OHIO

Standard Oil Co. (Ohio)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Inclds tax of	Kero. Tank wagon
All Ohio points	22.0	24.0	2.0	17.0

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Inclds tax of	Kero. Tank wagon
Omaha	21.25	23.25	2.0	16.0
McCook	22.75	24.75	2.0	17.5
Norfolk	21.75	23.75	2.0	16.5
North Platte	22.75	24.75	2.0	17.25
Scottsbuff	22.25	24.25	2.0	16.75

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Inclds tax of	Kero. Tank wagon
Denver, Colo.	22.0	22.0	2.0	19.0
Pueblo	22.0	24.0	2.0	18.0
Casper, Wyo.	22.5	24.5	2.5	17.5
Cheyenne	23.5	25.5	2.5	19.0
Butte, Mont.	24.0	24.0	2.0	21.0
Helena	26.0	28.0	2.0	21.0
Salt Lake, Utah	26.0	28.0	3.5	19.0
Boise, Idaho	27.0	29.0	3.0	21.0
Albuquerque, N. Mex.	26.5	28.5	3.0	21.0

PACIFIC COAST DISTRICT

Standard Oil Co. (California)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Inclds tax of	Kero. Tank wagon
San Francisco	18.0	22.0	2.0	15.5
Los Angeles	16.5	20.5	2.0	15.5
Fresno	18.5	22.5	2.0	17.5
Reno, Nev.	22.5	27.5	4.0	19.0
Portland, Ore.	19.0	23.0	3.0	14.5
Seattle, Wash.	18.0	22.0	2.0	16.5
Spokane	22.0	26.0	2.0	20.5
Tacoma	18.0	22.0	2.0	16.5
Phoenix, Ariz.	25.0	28.0	3.0	21.5

CALIFORNIA
***Standard Oil Co.-Union Oil Co.**

Gravity—	Long Beach Huntington Beach Richfield Brea-Olinda Rosecrans-Dom'gues Torrance-Inglewood	Whittier La Habra Montebello	Kern River Newhall-McKittrick Midway-Sunset Elk Hills Lost Hills Belridge	Coyote	Santa Fe Springs	Coalinga	Wheeler Ridge	Santa Maria Ventura Salt Lake
14°	.85	.85	.75	.85	....	.75	.75	.85
15°	.87	.85	.75	.85	....	.75	.75	.85
16°	.90	.85	.75	.85	....	.75	.75	.85
17°	.94	.85	.75	.85	....	.75	.75	.85
18°	.98	.86	.75	.86	....	.75	.75	.85
19°	1.04	.87	.75	.87	....	.75	.75	.85
20°	1.10	.89	.82	.90	.89	.79	.78	.90
21°	1.16	.91	.90	.93	.91	.86	.81	.97
22°	1.22	.94	1.00	1.06	.94	.93	.85	1.04
23°	1.28	.97	1.11	1.14	.97	1.00	.89	1.11
24°	1.34	1.01	1.22	1.22	1.02	1.07	.93	1.18
25°	1.40	1.05	1.33	1.30	1.08	1.14	.97	1.25
26°	1.46	1.09	1.44	1.38	1.16	1.21	1.01	1.32
27°	1.52	1.13	1.55	1.46	1.24	1.28	1.06	1.39
28°	1.58	1.17	1.66	1.54	1.32	1.35	....	1.46
29°	1.64	1.21	1.77	1.62	1.40	1.42	....	1.53
30°	1.70	1.25	1.88	1.70	1.48	1.49	....	1.60
31°	1.76	....	1.99	....	1.60	1.56	....	1.67
32°	1.84	....	2.10	....	1.72	1.63	....	1.73
33°	1.92	....	2.21	....	1.84	1.70	....	1.79
34°	2.00	....	2.32	....	1.96	1.77	....	1.85
35°	2.08	....	....	....	2.08	1.84	....	1.92
36°	2.16	....	....	....	2.16	....	....	....
37°	2.24	....	....	....	2.24	....	....	....
38°	2.34	....	....	....	2.34	....	....	....
39°	2.44	....	....	....	2.44	....	....	....
40°	2.54	....	....	....	....	....	....	....
41°	2.64	....	....	....	....	....	....	....
42°	2.74	....	....	....	....	....	....	....

*Column 2—Long Beach and Huntington Beach crudes, 14 to 22 degrees, inclusive; Richfield and Brea-Olinda, 14 to 30 degrees; Torrance and Inglewood, 14 to 28; Domingues, 24 to 42 degrees. Rosecrans crude ranges from 14 to 42 degrees, but only Union Oil Co. posts below 24 degrees.
Column 3—Whittier and La Habra crudes, 14 to 22 degrees; Montebello, 14 to 30 degrees.
Column 4—Kern River, Newhall and McKittrick, 14 to 19 degrees; Midway-Sunset and Elk Hills, 14 to 33 degrees; Lost Hills and Belridge, 14 to 34 degrees.
Column 6—Santa Fe Springs. Only Union Oil Co. posts below 24 degrees.
Column 9—Salt Lake, 14 to 19 degrees, inclusive; Santa Maria, 14 to 30 degrees; Ventura, 14 to 35 degrees. Posted only by Union Oil Co.

TANKWAGON PRICE CHANGES

May 26—Atlantic Refining Co. advanced tankwagon and service station prices of gasoline 1 cent in Pennsylvania, Delaware and the New Englands states.

June 1—The Texas Company advanced tankwagon and service station prices of gasoline 1 cent. It also discontinued the practice of giving quantity discounts. The Standard Oil Co. of Louisiana advanced tankwagon and service station prices of gasoline 1 cent in its territory.

CRUDE PRICE CHANGES

May 26—Louisiana Oil Refining Corp. reduced Urania, La. crude 15 cents.

SOUTHWEST OIL MARKETERS

OKLAHOMA CITY, Okla., May 29.—The Oklahoma Oil Marketers, Inc., with headquarters at Enid, recently amended its charter and changed the name to the Southwest Oil Marketers, Inc. The capital stock is $25,000, and the incorporators are C. M. Gentry of Enid, W. W. Blackburn of Elk City, and William Brown of Hobart. The corporation is not related to the Oklahoma Oil Jobbers Association.

NEW CLEVELAND MANAGER

CHICAGO, May 29.—The Cleveland offices of the Roxana Petroleum Corp. have been placed in charge of R. D. B. Ebbert of the St. Louis office.

CRUDE OIL PRICES

(Continued from Page 151)

Penna Grade Oil in Southwest Pa. Line Lines (West Virginia)	3.50
Penna Grade Oil in Eureka Pipe Line Lines (Pennsylvania)	3.55
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio)	3.30
Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia)	2.40
Corning Grade Oil in Buckeye Pipe Line Lines (Ohio)	2.55
Somerset Medium Oil in Cumberland Pipe Pipe Lines (Kentucky)	2.50
Somerset Light Oil in Cumberland Pipe Line Lines (Kentucky)	2.65
Ragland Grade Oil in Cumberland Pipe Line Lines (Kentucky)	1.25
Gaines (Pennsylvania)	3.10
Keister (Pennsylvania)	2.45

MIDDLE WESTERN STATES
Ohio Oil Co.

Lima	2.48
Wooster	2.55
Illinois	2.37
Indiana	2.25
Princeton	2.37
Plymouth	1.90
Waterloo	1.35
*Western Kentucky, 32.9° and below	2.10
33° to 35.9°	2.20
36° to 38.9°	2.30
39° and above	2.40
†Cumberland, Barren and Monroe Counties	2.65
§Oil Springs (Canada)	2.95
§Petrolia (Canada)	2.88

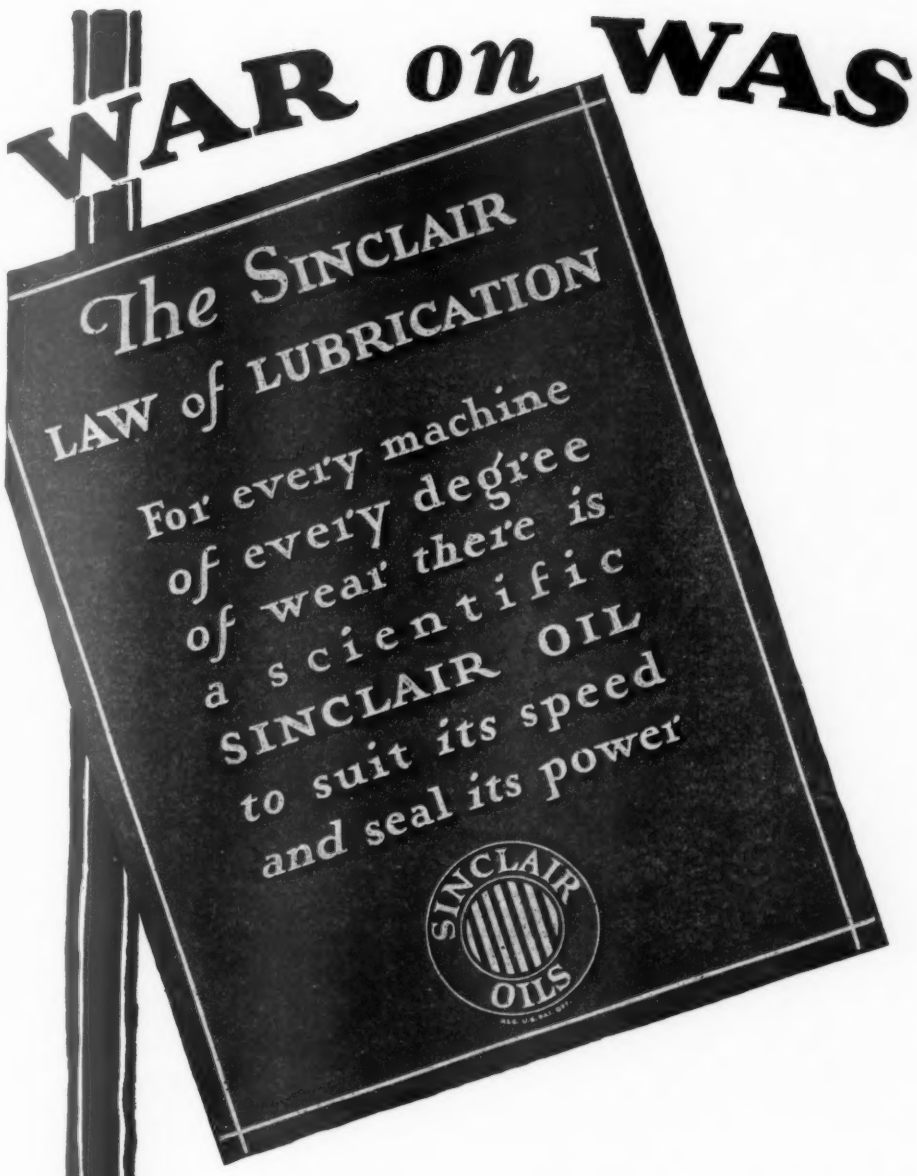
*Posted by Indian Refining Co.
†Posted by Paragon Development Co.
§Posted by Imperial Oil Co., Ltd.

MEXICO

*Tuxpam light (f.o.b. Mex. ports)	$1.35
§Panuco heavy (f.o.b. Mex. ports)	1.15
Tuxpam (New York)	2.15
Panuco (New York)	1.80

*Plus 32.328c tax. §17.631c tax.

WAR on WASTE!



THE motorist, in buying oil, is entitled to correct lubrication for his engine—and it is the dealer's responsibility to see that he gets it. Sinclair feels that responsibility—and therefore manufactures Opaline Motor Oil to sell according to the Sinclair Law of Lubrication—a different grade of Opaline Motor Oil "for every degree of wear" of the engine.

This means correct lubrication and economical transportation. It is the motorist's protection against *Waste of Power* and wearing of parts. This is the Sinclair dealer's method of making more satisfied customers.

SINCLAIR REFINING COMPANY
45 Nassau Street, New York
Atlanta Detroit Kansas City Chicago Houston Omaha

SINCLAIR **OPALINE** MOTOR OIL
REG. U. S. PAT. OFF.

1916-26—TEN YEARS OF MANUFACTURING AND DISTRIBUTING PETROLEUM PRODUCTS OF QUALITY

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GULF COAST FIELDS

(Continued from Page 50)

northwest of Rosenburg, came in at 3,700 feet flowing 1,500 bbls. 34 gravity oil. It is the second producer there, Gulf Co.'s No. 5 Moore coming in January 19, last, at 3,708 feet with an initial flow of 2,500 bbls. 34 gravity oil. It is now pumping about 40 bbls. per day. The Gulf Co. has 10,000 acres under lease there, which covers the dome and surrounding territory. Like the Nash Dome held by the Rycade Corp., Orchard Dome is another "one company" pool. The first well was located in a lake, or swamp, which has since been drained.

Liberty County Pools

In the Hull Pool, the Republic Production-Houston Oil Co.'s No. 126 Dolbear is drilling around 1,765 feet. No. 128 is rigging and No. 129 is drilling at 2,345 feet. No. 124 is working over. The Gulf Production Co.'s No. 9 Thomas is working over. No. 17 Scarborough is at 3,970 feet. No. 22 Morris-Phillips is at 3,345 feet. No. 11 Phoenix is rigging to work over, No. 19 is deepening and No. 68 is rigging. The Humble Oil & Refining Co.'s No. 22 Guedry is a derrick and No. 23 is rigging. Liner is being set in No. 3 Sterling at 4,600 feet. The Texas Company's No. 1 Hannah is at 3,235 feet. No. 10 Merchant is around 4,066 feet. Texas-Vacuum's No. 2 Hannah is at 2,676 feet. No. 1 Hannah fee is milling at 1,545 feet. The Mecom Oil Co.'s No. 2 Taylor is at 3,675 feet with a derrick standing for No. 9. The Empire Gas & Fuel Co.'s No. 19 Barngrover is at 3,055 feet. The Houston Production Co.'s No. 6 Palmer is around 2,355 feet.

In the South Liberty Pool, the Coastal Oil Co.'s No. 1 LeCoure is drilling around 2,565 feet. The Humble Oil & Refining Co.'s No. 1 Deussen is at 3,765 feet. No. 2 Welder on the west side of the Trinity River is drilling below 1,655 feet.

Hardin County Pools

At Batson the East Batson Oil Co.'s State land is drilling around 1,080 feet. The Gulf Production Co.'s No. 60 Choate is at 1,155 feet. The Capitol Oil Co.'s No. 5 Hodges is fishing at 1,100 feet.

In the Sour Lake Pool, the Sun Oil Co.'s No. 1 Libbie is at 3,615 feet. The Lake View Oil Co.'s No. 48 Hardin is rigging. The Yount-Lee Oil Co.'s No. 4 Gilbert is drilling around 2,765 feet and No. 1 Lynn is 1,900 feet.

In the Saratoga Pool the Rio Bravo Oil Co.'s No. 4 Cotton is at 875 feet and No. 5 Fountain around 4,175 feet.

Other Pools

At Blue Ridge the Invincible Oil Co.'s No. 3 is around 2,780 feet. Gulf Oil Co.'s No. 7-B Blakely is around 2,235 feet and Abercrombie and others' No. 1 West-Schenck is at 1,675 feet.

The Texas Company's No. 22 Arnold in the West Columbia Pool is at 3,980 feet.

In the Goose Creek Pool, the Humble Oil & Refining Co.'s No. 67 Smith is at 1,235 feet. No. 12 Galliard peninsula is working over, as is No. 17 and No. 22 is drilling around 3,124 feet. The Gulf Production Co.'s No. 8 State land is fishing. No. 33 Beaumont is at 2,765 feet. No. 12 Chapman-Bryan is around 1,675 feet. No. 7 Wright is at 3,345 feet. No. 5 Hirsch is around 4,510 feet. Sun Oil Co.'s No. 8 Wright is at 2,435 feet. L. G. Marshall's No. 3 Bryan at 4,250 feet. M. & B. Oil Co.'s No. 4 Scorrgea is drilling below 3,970 feet.

At High Island in Galveston County the Gulf Production Co.'s No. 2-A Smith is rigging and No. 5 Smith is drilling around 3,615 feet. Sun Oil Co.'s No. 8-C Cade is drilling at 3,565 feet and No. 10 Cade is around 3,400 feet.

At Big Creek in Fort Bend County, Gulf Production Co.'s No. 11 Wheat is at 1,765 feet and No. 29 Davis around 3,225 feet.

On the south side of the Spindletop Pool the Young-Lee Oil Co.'s No. 6 McFadden is drilling around 1,565 feet. A derrick is standing for No. 5 Gladys on the southwest side. W. O. Barbee's No. 1 Gladys, on the west side, is at 980 feet. Yount-Lee Oil Co. has a location for No. 1 Quinn-Trembly. Brown-Williams' No. 1 Gladys is rigging. Gulf Production Co.'s No. 186 Gladys is drilling around 1,000 feet. Seven Oil Co.'s No. 1 Trembly is at 985 feet. Wilson & Broach's No. 49 Higgins is at 455 feet. Porch & Telshaw's No. 3 Trembly is shut down waiting on 6-inch casing.

In the Edgerly Pool, the Green Oil Co.'s No. 7 Moore is bailing at 2,910 feet. Gulf Refining Co.'s No. 31 Bright-Penn is drilling at 3,135 feet.

Rycade Petroleum Corp.'s No. 1 Kountz on the south side of the Markham Pool, is drilling below 5,155 feet, one of the deepest tests in the Coastal region.

Orange and Boling

In the Orange Pool, the Gulf Production Co.'s No. 3 Hager fee on the east side of Cow Bayou is deepening from 4,625 feet. No. 4 is rigging to work over. No. 23 is drilling around 3,125 feet. The Rycade Petroleum Corp. is setting a liner in No. 5-B Cow Bayou. The Kishi Development Co.'s No. 7 McGuire is deepening at 4,685 feet. On the Chesson acreage, the Texhoma Oil Co.'s No. 6 is milling at 4,610 feet. No. 15 is drilling at 3,536 feet. The Humble Oil & Refining Co.'s No. 25-A Chesson is sidetracking at 2,180 feet. Orange Petroleum Co.'s No. 12 Chesson is at 4,434 feet. Its No. 1 Williams is around 4,700 feet. Brownie Babbittee Oil Co.'s No. 2 McLean is rigging to work over. The Rex Petroleum Co.'s No. 4 Carbello is drilling at 4,925 feet.

At Boling, the Atlantic Oil Producing Co.'s No. 3 Taylor is idle at 2,900 feet. Sinclair Oil & Gas Co.'s No. 5 Taylor is milling at 3,990 feet. A derrick is up for No. 6. Sun Oil Co.'s No. 11 Taylor is drilling at 3,890 feet, with a derrick standing for No. 6 and a location made for No. 7. The Texas Company's No. 8 Taylor is drilling at 4,135 feet. No. 9 is at 2,375 feet. Derricks are up for Nos. 2 and 3 Floyd. Oxford-Southern Co.'s joint No. 1 Floyd, a work over, will pump at 2,775 feet. Humble-Gulf Co.'s No. 6 Hawes is idle at 4,450 feet. No. 7 Hawes is around 3,655 feet. No. 8 is a location. No. 9 is drilling around 3,255 feet. No. 10 is at 3,125 feet. No. 11 is a derrick. No. 12 is drilling at 700 feet. No. 13 is rigging. No. 14 is a derrick. Locations have been made for Nos. 15 and 16. Vacuum Oil Co. has locations for Nos. 4 and 5 Hooper. The above are all grouped around the original production. Out to the northwest, the Humphreys Corp.'s No. 1 Mick is drilling below 3,600 feet and No. 1 Woodfine at 765 feet. The Houston-Gulf Gas Co.'s No. 1 Woodfine is at 875 feet. The Bennett Production Co.'s No. 1 Woodfine is rigging.

Over on the east side of the dome, across the Bernard River in Brazoria County, the Sun Oil Co.'s No. 1 Farmer is drilling at 800 feet. The Texas Company has a location for No. 1 Farmer.

Bennett Production Co.'s No. 1 on the northwest side of the dome at Barber Hill in Chambers County, is making an average of 400 bbls. per day. It came in last week credited with 600 bbls. Same company is rigging No. 2 and the Kirby Petroleum Co. is starting No. 1 Fisher on the north side.

Miscellaneous Tests

Harry Pennington has moved in a rig for a test on the Austin Block, Austin County, north of Wharton County. The territory has all the earmarks of a saline dome, such as gas seepages, shallow gas in water wells, pyrites of iron, sulphur water and sour water. The surface is sandy. These marks cover an area of approximately 800 acres. No. geophysical tests have been made, but formation holes will be drilled.

It would appear that less interest is being manifested in geophysical exploration work than has been the case during the past three years. Practically all the acreage in the Coastal Plains Belt has been covered by the seismograph or the torsional balance, or both and the results have been rather negative to date. Such new domes as have been credited to geophysical exploration work already possessed many if not all the earmarks mentioned above. Among new discoveries falling into this class are Nash and Orchard Domes in Fort Bend County; south of Van Vleck in Matagorda County and at Hawkinsville; Fannette, Jefferson County; south of Stark, La. Production has been developed at Nash and Orchard.

The following is a partial list of old and well known domes where much drilling has been done during the past 20 years without developing any production of consequence, but which are still held as good propsctive areas by reason of the fact that they have been partially defined: Davis Hill and North Dayton in Liberty County. The Humble Oil & Refining Co. drilled 22 holes at Davis Hill. Hockley and Cross Timbers, Harris County, the Gulf and The Texas Company and the Texas Exploration Co. all spent a lot of money around Hockley. Stratton Ridge in Brazoria County is another spot where vast sums have been expended in wildcatting. Bessie Heights in Orange County is still another. The Gulf Co. is now drilling around Fannette Dome in Jefferson County and the Houston Oil Co. at Big Hill in that county.

West of the Colorado River is Shepherd Mott in Matagorda County and it might be added that the region between the Brazos and Colorado Rivers is now being explored geophysically. The Roxana Petroleum Corp. is now trying to work out a dome around Hinkle Ferry, south of the town of Brazoria in Brazoria County. It is drilling No. 2 Allen ranch at 3,800 feet. No. 2 Clements State farm is at 435 feet. No. 2 Kropp was abandoned in cap rock.

The Palangana Dome, north of San Diego, Duval County, has been the scene of considerable wildcatting. Another Dome is south of Alice.

The Humble Oil & Refining Co. has developed a small pool on the famous King ranch, southeast of Kingsville, Kleberg County. Roxana Petroleum Corp. is rigging No. 1 King, Willacy County, 70 miles south of Kingsville. The King ranch comprises 1,000,000 acres covering several counties in that section of the State, southwest and south of Corpus Christi.

In Jefferson Davis Parish, Louisiana, the Yount-Lee Oil Co. is starting No. 14 Ervine.

Vacuum Oil Co. is drilling on state prison land in West Feliciana Parish.

In Liberty County (Texas) Harrison Oil Co. is drilling No. 2 Schlender on the southwest side of the Dayton Pool. Campbell and others has a derrick up for No. 1 Brown, near Devers.

In Hardin County Weldon Oil Co.'s No. 1, near Batson, is around 2,000 feet. The Pine Oil Co. is rigging No. 1 Fullbright.

Flannigan Oil Co.'s No. 1 at Lufkin, Angelina County, is around 455 feet.

Humble Oil & Refining Co.'s No. 1 Sabine tram is below 3,625 feet in Newton County.

At Long Point, Fort Bend County, Gulf Production Co.'s No. 8 Davis is drilling at 3,708 feet and No. 11 at 800 feet. Neiland, Inc.'s No. 2 Fredericks is idle at 4,190 feet.

In Harris County, Kelly and others' No. 1 Lipper is rigging. Kane Production Co.'s No. 3 Foster is at 1,575 feet.

The Texas Company has started No. 1 Brown in Williamson County.

MR. HUGHES' ADDRESS BEFORE OIL BOARD

(Continued from Page 100)

with the problem of production from an economic standpoint, it would seem to be futile to discuss a policy of conserving oil in the ground.

General Conclusions as to Remedies

The remedies which have been proposed to the Board are (1) Scientific and (2) Political.

Political action is superficially attractive, but it is beset with difficulties and it is not likely to succeed. Something might be accomplished by the removal of legal obstacles to intelligent co-operation.

Scientific effort holds the promise of the future. Much has already been accomplished. The cracking process has done more for conservation than any legislative scheme which could be put into effect under our constitutional system.

The Government can accomplish much in stimulating and leading research. The oil industry is ready to co-operate in all practicable measures to promote research, to attain and diffuse more exact knowledge, to stimulate invention. Throughout the industry, at this time as never before, the keenest minds are at work studying every process, searching for improvement in every direction. This is, of course, largely due to the demands of comeptition. It is motivated by intelligent self-interest.

It cannot be doubted, in view of the experimentation that is now going on, that we are on the eve of important improvements in every department of the industry; in methods of production; in the recovery of oil that still lies below the surface within known fields, in the utilization of what is produced; in the promotion of efficiency; in the development of substitutes. The great service that this Board can render is to bring about an intelligent conception on the part of the public of the facts relating to the industry, of its problems both economic and legal, and to foster the scientific investigations upon which ultimately the conservation of our vastly important oil resources must depend.

UNITED CARBON PLANT PLANNED FOR UTAH

United Carbon Co. has bought from Utah Oil Refining Co. (Midwest Refining) the natural gas rights on 5,000 acres near Cisco, in Grand County, Utah. The sale includes the big Cisco gas well, which when first brought in by Utah Refining Co. produced 90,000,000 feet of gas a day, but has settled down to a steady flow of 20,000,000 feet daily. A second well drilled by Utah Oil Refining Co. struck a like flow, which was successfully mudded in. Utah Oil expended $140,000 drilling these two wells, striking the gas in well No. 1 at 2,200 feet and in well No. 2 at 3,200 feet.

Plant for the manufacture of carbon black will be located in the ges field, 12 miles from Cisco, the nearest rail point, and served by the Denver & Rio Grande Western.

WHAT OIL HAS DONE FOR STATE OF TEXAS

(Continued from Page 32)

maturity, and interest must be paid at all times, whether the business venture for which is was borrowed has a continuous success or not. If stock is sold for the needed funds, and if there come periods of depression, the stock purchaser simply waits for better times and for the earning of dividends. If he is a lender instead, he can and will demand his interest, and when the obligations mature demand their payment.

It is known of all men that funds for industrial development and manufacturing are much more safely procured if found by the sale of corporate stock than if found in the form of loans.

Must Be Corporate Organization

I think that it is very fortunate, not only for the oil industry, but for every industry in the State, that our people have come to realize more than at any time in the past, that practically every business of any size must, for practical business reasons, be conducted by means of a corporate organization, and that a corporation is merely a form of organization, whereby individual citizens may contribute their share of the capital employed in the enterprise and reap their proportionate share of the benefits of the entire business. Our people now realize that whatever of injustice or wrong may be hurled against a corporation to its damage, in the last analysis does injustice and damage to individual citizens of the State—friends, neighbors, widows

and orphans, as well as owners of wealth, whose funds may be invested in the stock of such corporation. The number of stockholders in corporations in the United States in the past two decades has grown from around 4,000,000 to approximately 15,000,000 today. This fact in itself is sufficient evidence of the widespread ownership of the public in our corporations.

Time was when a goodly percentage of our citizens seemed to feel that anything taken from a corporation, whether in a business transaction or by a wrongful or excessive verdict or judgment of the court, or otherwise, was taken from a mysterious fund belonging to some far-off owner, who was not entitled to the rights and protection that the law guarantees to an ordinary citizen. I am glad to be able to say, that in my opinion this feeling has largely passed.

Foreign money has largely built up the Texas oil industry. It is beginning to come to Texas in other industries, but not yet in the volume that we need. The oil industry may justly take pride in the part it has been able to play in helping our people and our State toward this goal.

TIGHTER TONE IN OKLAHOMA GASOLINE

(Continued from Page 28)

ly means an advance in the actual tankwagon price by The Texas Company of from 1½ to 3 cents, depending on the size of the contracts. Another angle to the tankwagon advance may be that The Texas Company merely is putting a 1-cent premium on its new high test gasoline.

Expect Advancing Market

That Oklahoma spot refinery markets suffered no material further declines during the week strengthened the opinion of most market observers that the bottom on gasoline had been reached for this time. And, as most refiners were tightening up on June quotations, which was reflected in spot offerings, every indication pointed to an advancing market during June.

Refiners on the whole report they are in a fair position regarding stocks. Marketers placing instructions the past week on material previously bought resulted in a marked reduction of stocks, they claim. Now, although refinery stocks throughout the country still are known to be large, the June consumption is expected to make substantial inroads into these.

Of particular note during the week was the ability of refiners to hold fuel oil prices. With the industrial and domestic demand light, the firmness of prices indicated that the supply of this product is not great and that refiners are going to use every bit possible for cracking purposes.

With cracking demand, market students are not anticipating any particular break in the market and predictions are freely made that no grade will sell under $1.10 during the summer, in contrast to low prices of 80 and 85 cents last summer.

Gasoline and Naphtha

As previously mentioned gasoline and naphtha prices were unchanged during the week. The U. S. Motor (58-60 437) gasoline and lower grades developed a tighter tone while the higher gravities, due to the lack of export demand, continued easy. Tuesday found more U. S. Motor gasoline moving at 12 cents than a week ago but there still was 11¾-cent material available for shoppers. The 56-58 450 gasoline, which now is entering its season of demand, was unavailable under 11½ cents while the 58-60 450 grade moved from 11⅝ to 11¾ cents. Naphtha continued firm at 11¼ to 11½ cents, due more to the scarcity of the product rather than a heavy demand.

The 64-66 375 gasoline was easy at 12¾ cents and although a few refiners held firm at 13 cents they found no market for the product. The 60-62 400 material was quoted readily at 12 cents.

Natural Gasolines and Blends

Natural gasolines continued dull with few inquiries being received and sellers having difficulty in getting orders. As a result all prices were off ¼ cent, with the A grades easily obtainable at 10¼ cents; the B grades at 10 cents and Grade C at 9¾ cents. Several sales of Grade C were made even lower. Blends also were quiet but due to the limited sources of supply, markets were fairly steady.

Kerosene and Distillates

The slackening of kerosene demand increased to sluggishness the past week and with stocks reported piling up, numerous concessions were made. The 41-43 water white grade was reported offered from some sources at 9¾ cents and 10-cent sales were few. Refiners are expecting another period of kerosene demand with the opening of the harvest season although the extent of kerosene consumption for this purpose is questionable.

Distillates also were easy although actual market prices gave no indication of a bad break. The 38-40 distillate was quoted Tuesday at 4⅜ to 4½ cents and the 36-38 grade an eighth to a quarter of a cent under.

Fuel Oil and Gas Oil

There was no change in fuel oil during the week. Prices were held firmly although demand from industrial consumers was light. Some 24-26 fuel was available as low as $1.27½ cents for future delivery but to obtain prompt shipment buyers were forced to give from $1.30 to $1.32½ cents. And, in some cases, buyers were able to get low grades for $1.20 but this also was not the rule. The strengthening of Arkansas and Louisiana fuel during the week has been one factor in firming Oklahoma markets.

Gas oil, however, was slightly softer, being available even under 4 cents. Cracking stock was bought for 4 cents but some was moved at 4⅛ cents.

Lubricants and Wax

Lubricating oil shipments were unusually heavy during the week and a generally better tone was apparent. Prices, however, continued unchanged. Manufacturers Tuesday were uncertain as to possible general advances despite reports that Chicago sellers were getting from a half to a cent more than last week. Wax also was unchanged although soft.

DROP IN PRODUCTION; INCREASE IN NEW WORK

(Continued from Page 29)

Colorado	14	102	116
Utah	3	31	34
New Mexico	14	130	144
Total May	1,125	4,595	5,720
Total April	1,052	4,285	5,337
Difference	73	310	383

OKLAHOMA

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Osage	54	3,769	15	3
Tulsa	23	816	11	2
Okmulgee	42	823	17	8
Seminole	16	6,970	6	1
Okfuskee	16	2,182	4	2
Hughes	8	2,336	2	0
Muskogee and Wagoner	18	55	11	3
Creek	58	6,247	14	7
Pawnee	19	1,613	3	0
Kay	23	8,650	8	4
Payne	13	4,760	1	2
Lincoln	23	3,669	10	0
Garfield	22	12,394	1	1
Stephens & Cotton	21	283	14	0
Jefferson	6	535	0	0
Carter	18	2,184	6	0
Grady	9	117	2	5
Miscellaneous	18	215	11	1
Total May	407	57,617	135	39
Total April	467	105,707	132	45
Difference	60	48,090	3	6

Summary of Rigs and Wells Drilling

County—	Rigs	Drg.	Ttl.
Osage	21	107	128
Tulsa	4	25	29
Okmulgee	18	78	96
Seminole	16	112	128
Okfuskee	12	59	71
Hughes	16	54	70
Muskogee and Wagoner	9	23	32
Creek	35	128	163
Pawnee	15	42	57
Kay	15	71	86
Payne	2	64	66
Lincoln	4	56	60
Noble	0	25	25
Garfield	28	119	147
Grant	1	15	16
Grady	9	26	35
Comanche	1	19	20
Stephens and Cotton	7	42	49
Jefferson	3	14	17
Pontotoc	2	21	23
Carter	15	59	74
Miscellaneous	15	68	83
Total May	248	1,227	1,475
Total April	299	1,102	1,401
Difference	51	125	74

KANSAS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Butler	23	1,900	8	0
Chautauqua and Elk	11	610	2	1
Cowley	11	356	5	1
Greenwood	84	10,874	21	0
Lyon	16	225	13	0
Russell	4	405	0	0
Miscellaneous	16	1,860	8	2
Total May	165	16,230	57	4
Total April	201	20,330	62	12
Difference	36	4,100	5	8

Summary of Rigs and Wells Drilling

County—	Rigs	Drg.	Ttl.
Butler	10	56	66
Chautauqua and Elk	4	22	26
Cowley	5	33	38
Greenwood	36	82	118
Kingman	2	12	14
Lyon	11	32	43
Montgomery	0	13	13
Rice	2	11	13
Sumner	1	13	14
Miscellaneous	20	106	126
Total May	90	381	471
Total April	103	356	459
Difference	13	25	12

NORTH CENTRAL TEXAS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Hutchinson	38	32,325	0	0
Carson	4	575	1	1
Gray	2	67	0	0
Potter	1	0	0	1
Collingsworth	1	0	1	0
Roberts	1	0	1	0
Wheeler	1	0	1	0
Wichita	83	587	17	0
Wilbarger	40	3,926	9	1
Archer	167	4,026	83	0
Montague	22	1,436	2	0
Clay	5	105	2	1
Baylor	2	60	4	0
Hall	1	0	1	0
Jack	5	42	4	0
Young	49	2,136	19	0
Stephens	19	482	6	3
Shackelford	19	6,957	9	0
Eastland	12	387	7	1
Callahan	9	525	5	1
Coleman	20	1,434	13	0
Brown	88	4,841	39	0
Mitchell	6	269	2	0
Howard	2	68	0	0
Sterling	2	0	2	0
Reagan	4	4,338	1	0
Crockett	5	382	1	0
Upton	7	421	2	0
Crane	2	90	1	0
Pecos	2	0	2	0
Glasscock	1	0	1	0
El Paso	1	0	1	0
Comanche	1	0	1	0
Jones	1	0	1	0
Throckmorton	3	48	2	0
Concho	1	0	1	0
Total May	630	65,527	272	9
Total April	387	33,287	139	12
Difference	243	32,240	133	3

Summary of Wells Drilling

County—	Rigs	Drg.	S.D.	Ttl.
Wichita	3	27	14	44
Wilbarger	18	79	14	111
Archer	15	53	8	76
Young	11	10	9	30
Stephens	5	44	12	61
Eastland	2	26	8	36
Brown	19	75	25	119
Coleman	12	24	9	45
Callahan	4	22	5	31
Mitchell	4	11	2	17
Shackelford	5	28	8	41
Montague	5	18	3	26
Throckmorton	3	13	3	19
Upton	11	6	6	23
Crane	3	5	2	10
Crockett	2	17	5	24
Reagan	3	32	3	38
Hutchinson	96	138	10	244
Carson	11	18	2	31
Miscellaneous	33	79	56	168
Total May	265	725	204	1,194
Total April	168	859	0	1,027
Difference	97	134	204	167

EAST CENTRAL TEXAS

Summary of Field Operations

District—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Anderson	3	0	3	0	1	1	2
Cherokee	0	0	0	0	0	4	0
Cherokee	0	0	0	0	0	4	4
Ellis	0	0	0	0	0	1	1
Falls	1	0	1	0	0	1	1
Freestone	1	0	1	0	0	1	1
Henderson	0	0	0	0	0	3	3
Hill	1	0	1	0	0	0	0
Hopkins	0	0	0	0	0	1	1
Hunt	0	0	0	0	0	2	2
Limestone	6	200	3	1	1	5	6
Kaufman	0	0	0	0	0	1	1
Milam	0	0	0	0	0	2	2
Navarro	2	175	1	0	0	7	7
Total May	14	375	10	1	2	29	31
Total April	9	50	8	0	3	31	34
Difference	5	325	2	1	1	2	3

SOUTHWEST TEXAS

Summary of Field Operations

District—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Luling	0	0	0	0	0	4	4
Mirando	29	6,400	1	6	12	34	46
Somerset	2	20	0	0	1	2	3
Rockdale-Minerva	3	55	0	0	2	7	9
Lockhart	0	0	0	0	0	1	1
Miscel.	6	0	5	1	18	54	72
Ttls. May	31	6,475	6	7	33	102	135
Ttls. April	34	3,518	11	14	31	92	123
Difference	3	2,957	5	7	2	10	12

GULF COAST

Summary of Field Operations

District—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Boling	9	4,695	2	0	12	16	28
Batson	4	223	0	0	2	3	5
Blue Ridge	1	175	0	0	0	2	2
Big Creek	2	150	1	0	0	2	3
Barber Hill	2	900	0	0	2	0	2
Dayton	0	0	0	0	0	2	2
Edgerly (La.)	2	0	2	0	1	3	4
Goose Creek	5	300	3	0	3	10	13
Humble	1	0	1	0	0	5	5
Hull	16	6,355	6	0	6	16	22
High Island	3	550	1	0	1	3	4
Jennings,, La.	2	600	0	0	0	3	3
Lockport, La.	3	0	3	0	3	5	8
Markham	1	0	0	1	0	2	2
Nash Dome	3	2,700	0	1	0	3	3
Orange	14	2,160	7	0	3	13	16
Pierce Jct.	3	625	1	0	0	3	3
Piedras Pintas	2	0	2	0	1	2	3
Spindletop	5	12,110	0	0	2	4	6
Saratoga	4	225	0	0	0	2	2
Sour Lake	5	1,348	0	0	3	4	7
South Liberty	1	15	0	0	1	3	4
Vinton, La.	3	160	2	0	1	6	7
W. Columbia	1	0	1	0	0	1	1
Miscel.	10	0	9	1	12	55	67
Tlt. May	102	33,291	41	3	53	168	221
Ttl. April	87	48,310	26	0	66	176	242
Difference	15	15,019	15	3	13	9	21

ARKANSAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Union	107	11,874	9	4	33	81	114
Ouachita	17	1,070	3	1	3	19	22
Nevada	6	725	0	1	6	0	6
Columbia	2	38	0	0	3	5	8
Ark. wildcats	1	0	1	0	4	9	13
Total May	133	13,707	13	6	49	114	183
Total Apr.	141	17,092	27	6	36	128	164
Difference	8	3,385	14	0	13	14	1

NORTH LOUISANA

Summary of Field Operations

Parish—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Bossier	5	60	3	1	1	3	4
Caddo	20	2,364	1	2	3	42	45
Caldwell	0	0	0	0	1	2	3
Claiborne	0	0	0	0	0	4	4
De Soto	1	5	0	0	1	8	9
Grant	0	0	0	0	0	4	4
Monroe dist.	7	0	1	6	6	14	20
Sabine	0	0	0	0	2	3	5
Webster	4	360	0	0	8	10	18
Winn	0	0	0	0	2	2	4
La Salle	63	14,770	9	0	17	40	57
La. wildcats	4	10	3	0	6	2	8
Total May	104	17,569	17	9	47	134	181
Total April	103	10,621	17	10	58	127	185
Difference	1	6,948	0	1	11	7	4

WYOMING

Summary of Field Operations

District—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Big Muddy	0	0	0	0	3	1	4
Salt Creek	41	4,242	2	0	17	57	74
Lance Creek	0	0	0	0	0	1	1
Big Horn Basin	0	0	0	0	3	59	62
Lost Soldier & Carbon Co.	2	230	0	0	3	29	31
Rock River district	1	0	1	0	0	15	15
Fremont Co.	0	0	0	0	1	36	37
Osage	4	18	2	0	3	6	9
Natrona Co.	1	0	1	0	1	7	8
Lincoln and Uintah Co.	1	0	1	0	2	31	33
Baxter Basin	0	0	0	0	0	7	7
Miscellaneous	0	0	0	0	2	22	35
Total May	50	4,490	7	0	35	281	316
Total April	37	12,229	5	4	32	278	310
Difference	13	7,739	2	4	3	3	6

MONTANA

District—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Sunburst	24	5,368	2	3	10	52	62
Cat Creek and Miscellaneous	0	0	0	0	5	82	87
Total May	24	5,368	2	3	15	134	149
Total April	30	4,604	6	3	15	129	144
Difference	6	764	4	0	0	5	5

COLORADO

District—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Total May	10	4,480	1	0	14	102	116
Total April	10	0	10	0	19	103	122
Difference	0	4,480	9	0	5	1	6

UTAH

District—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Total May	0	0	0	0	3	31	34
Total April	0	0	0	0	3	31	34
Difference	0	0	0	0	0	0	0

NEW MEXICO

District—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Total May	23	955	11	0	14	130	144
Total April	27	1,395	9	0	15	137	152
Difference	4	440	2	0	1	7	8

EASTERN FIELDS

Summary of Wells Completed

Fields—	Comp.	Prod.	Dry	Gas
Allegany	26	50	0	0
Bradford	117	328	1	0
Middle Field	9	17	1	1
Venango-Clarion	33	53	1	3
Butler-Armstrong	15	25	5	3
Southwest Pennsylvania	19	24	3	11
West Virginia	95	488	16	47
Southeast Ohio	68	1,254	11	9
Total May	382	2,239	38	74
Total April	321	1,681	45	61
Difference	61	558	7	13

Summary of Work Under Way

Field—	Rigs	Drg.	Ttl.
Allegany	17	24	41
Bradford	30	118	148
Middle Field	1	7	8
Venango-Clarion	2	18	20
Butler Armstrong	13	14	27

Southwest Pennsylvania	19	30	49
West Virginia	60	123	183
Southeast Ohio	33	105	138
Total May 31	175	439	614
Total April 30	136	367	503
Difference	39	72	111

CENTRAL OHIO

Summary of Field Operations

District—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Knox	1	0	1	0	0	6	6
Ashland	2	0	0	2	7	7	14
Medina	1	0	1	0	5	6	11
Lorain	2	0	1	1	1	1	2
Wayne	1	0	0	1	5	11	16
Holmes	10	493	1	4	9	9	18
Athens	2	0	0	2	3	7	10
Coshocton	2	102	0	1	4	3	7
Guernsey	5	0	0	5	13	8	21
Cuyahoga	2	0	1	1	2	9	11
Ttl. May	28	595	5	17	49	67	116
Ttl. April	32	181	6	18	29	47	76
Difference	4	414	1	1	20	20	40

LIMA FIELD

Summary of Field Operations

District—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Wood	7	383	0	0	0	10	10
Hancock	6	117	1	0	0	9	9
Allen	4	31	0	0	0	5	5
Auglaize	5	35	2	0	0	5	5
Sandusky	3	30	0	0	0	2	2
Mercer	2	18	0	0	0	5	5
Seneca	1	0	1	0	0	1	1
Lucas	0	0	0	0	0	2	2
Ottawa	3	29	0	0	0	3	3
Shelby	6	49	1	0	2	7	9
Hardin	4	92	0	0	1	3	4
Darke	0	0	0	0	0	1	1
Paulding	0	0	0	0	2	1	3
Logan	0	0	0	0	0	1	1
Clark	0	0	0	0	0	1	1
Michigan	2	30	0	0	5	6	11
Ttl. May	43	814	5	0	10	62	72
Ttl. April	39	485	1	1	9	54	63
Difference	4	329	4	1	1	8	9

ILLINOIS

Summary of Field Operations

	Comp.	Prod.	Dry	Rigs	Drg.	Ttl.
Clark	4	75	0	0	4	4
Cumberland	0	0	0	0	1	1
Crawford	7	38	2	0	5	5
Lawrence	1	0	1	1	4	5
Wabash	13	307	4	3	12	15
Marion	2	60	0	1	0	1
Coles	0	0	0	0	1	1
Douglass	0	0	0	0	1	1
Jasper	1	0	1	0	0	0
Morgan	1	0	1	0	1	1
Fayette	0	0	0	1	0	1
Edwards	0	0	0	0	1	1
Randolph	0	0	0	0	1	1
Madison	0	0	0	0	1	1
McDonough	0	0	0	0	1	1
Total May	29	480	9	6	33	39
Total April	27	281	12	9	41	50
Difference	2	199	3	3	8	11

INDIANA

Summary of Field Operations

	Comp.	Prod.	Dry	Rigs	Drg.	Ttl.
Wells	0	0	0	0	1	1
Jay	2	20	1	0	2	2
Adams	2	30	0	1	7	8
Huntington	0	0	0	1	0	1
Randolph	0	0	0	1	0	1
Gibson	3	15	2	0	1	1
Pike	6	98	2	1	4	5
Sullivan	0	0	0	0	2	2
Allen	1	10	0	1	3	4
Knox	1	0	1	0	5	5
Daviess	1	30	0	0	2	2
Henderson	1	0	1	0	0	0
Jackson	0	0	0	0	1	1
Shelby	0	0	0	0	1	1
Lagrange	0	0	0	0	1	1
Vigo	0	0	0	0	1	1
Dubois	0	0	0	0	1	1
Warrick	0	0	0	0	1	1
Total May	17	203	7	5	33	38
Total April	6	46	3	3	35	38
Difference	11	157	4	2	2	0

KENTUCKY-TENNESSEE

Summary of Field Operations

District—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Warren	9	75	1	0	1	12	13
Allen	11	13	6	0	0	11	11
Barren	21	188	4	0	0	33	33
Owensboro District	14	180	4	0	0	22	22
Cumberland-Monroe	10	371	4	1	0	14	14
Hopkins	0	0	0	0	0	1	1
Simpson	0	0	0	0	0	5	5
Green	0	0	0	0	0	2	2
Casey	0	0	0	0	1	1	2
Wayne	2	1	1	0	0	6	6
Lee-Owsley	3	13	0	1	0	10	10
Lawrence-Johnson	15	156	0	0	3	14	17
Johnson-Magoffin	4	32	0	0	3	10	13
Floyd	0	0	0	0	0	8	8
Knox	0	0	0	0	0	2	2
Estill	5	15	2	0	0	3	3
Morgan	3	15	0	0	0	9	9
Elliott	0	0	0	0	1	2	3
Menifee	0	0	0	0	0	2	2
Laurel	0	0	0	0	0	1	1
Jackson	0	0	0	0	0	1	1
Greenup	0	0	0	0	0	1	1
Powell	1	2	0	0	0	0	0
Kentucky	98	1,061	22	2	9	170	179
Tennessee	1	500	0	0	0	17	17
Mississippi	0	0	0	0	3	8	11
Alabama	0	0	0	0	0	4	4
Georgia	4	0	4	0	0	0	0
Ttl. May	103	1,561	26	2	12	199	211
Ttl. April	100	1,774	24	2	18	192	210
Difference	3	213	2	0	6	7	1

CONTACT FILTRATION LITERATURE LISTED FOR READY REFERENCE

By Charles K. Francis, Ph. D.
Technical Editor

The adaptation of the long-known contacting of vegetable oils has but recently been applied to the decolorizing of petroleum products. The process has been extensively used in the cottonseed oil industry under conditions about opposite from those existing when used with lubricating stocks.

After cottonseed oil has been treated with alkali it is placed in a tank and heated to approximately 220 degrees Fahrenheit, then while being stirred with a mechanical stirrer, a definite quantity of fullers earth is added. After the agitation had caused complete mixture the mass is run to a filter press for the removal of the fullers earth.

The process as applied to lubricating oil consists in transferring acid treated oil to the contact tank where it is mixed with fullers earth, or other special clays, in the absence of air. The oil is heated to higher temperatures, 250 to 400 degrees, than the cottonseed oil. After complete mixing the mixture is run to a filter press.

The many details and some apparatus will be found in the references listed. There are other articles and patents in addition to these but it is hoped that this list is comprehensive enough for practical purposes.

Parsons, Charles L., Fullers Earth. United States Bureau of Mines, Bulletin 71, 1913.

James W. Weir, Mixed Crude Available for Lub Oil. The Oil and Gas Journal, September 17, 1925, page 24.

Gilpin and Cram, Fractionation of Crude Petroleum by Capillary Diffusion. United States Geological Survey, Bulletin 365.

Gilpin and Bransky, Diffusion of Crude Petroleum Through Fullers Earth. United States Geological Survey, Bulletin 475.

Bollmann, H., Oil Refining with Fullers Earth. German patents 367, 156 (23-a) 1922; 350, 698 (23-a) 1922; 347, 153 (23-a) 1922; 344, 633 (23-a) 1921; 366, 923 (23-a) 1922.

Oil is treated (first four patents) with a mixture of oil and fullers earth in counter current and under agitation in such a way that the oil moves faster than the mixture of fullers earth and oil. From one vessel to another the oil passes through filters and the fullers earth mixture is pumped in the opposite direction. Fifth patent (366, 923) covers regeneration of fullers earth with washing.

Allbright, W. B., Oil Bleaching by Mixing with Fullers Earth, etc. Official Gazette, United States patent 345, 872—1886.

Claim—the process of bleaching animal fats and oils at low temperature . . . with powdered fullers earth or other bleaching composition, intimately mixing or mingling the same together by mechanical agitation, etc.

Winter, A. W., Oil Bleaching by Mixing with Fullers Earth. United States Patent 233, 453—1880. Official Gazette.

Claim—Animal facts and oils and certain vegetable oils by reducing them to liquid condition, mixing therewith pulverized fullers earth in substantially the proportion specified, and then separating the earth from the oil or fat.

Engler, C., Refining of Petroleum Products by Mixing with Fullers Earth. "Das Erdoel, etc." 1913, III, 553.

While for filtration only granulated fullers earth is suitable, finely powdered and the refuse are suitable for mixing method. The filtration is more simple but much slower. The mixing method (in horizontal cylinders, etc., with stirrers) takes only 20-30 minutes for operation and is ready for filtering.

Engler, C., Paraffin Bleaching by Mixing with Fullers Earth, etc "Das Erdoel, etc.," 1913, III, 744.

Molten paraffin heated up to 300 degrees Centigrade is mixed with spadium, bone black, clay, fullers earth, etc., while stirring mechanically, or by air in horizontal cylinders, adding bleaching agent in small portions. It can be bleached by mixing method with bleaching powder after treatment with H_2SO_4.

Gurwitch, L., Refining with Fullers Earth, Mixing and Filtration Methods. "Wissenschalftliche Grundlagen, etc.," 1913, 241.

The advantage of mixing method, as compared with filtration, lies:

1. In utilizing fine powdered fullers earth, unsuitable for filtration;
2. In rapidity of mixing process (½-1 hour);
3. The standard quality of the refined oil;
4. Utilization of especially efficient, but expensive, bleaching powders.

The advantages of filtration:

1. Better utilization of adsorption capacity of fullers earth although granulated, with
2. Separation of the refined product in various grades (white, pale, yellow, etc.);
3. Smaller amount of oil to be recovered from fullers earth as compared with that in mixing;
4. Utilization of cheaper and less efficient bleaching clays.

Bensmann, M., Refining Petroleum Products by Mixing with Floridin. International Petroleum Congress, 1907. Bucharest 1910, II, 687-704.

Author, manager of Owl Commercial Co. in Quincy, describes floridin and its use in refining petroleum products. First time floridin was used in bleaching oils, etc., with "mixing methods" and afterwards was developed "filtration method." The advantages of mixing method are promptness of the operation (15-30 minutes); the same degree of bleaching is reached; the same amount is treated in every operation; finest powdered floridin, having larger contact surface, can be used, otherwise remaining as waste product (in filtration.)

The advantage of filtration, according to the author, is the simplicity of operation and opportunity to manufacture various grades of bleached product.

Hirtzel, Professor, Oil Bleaching by Mixing with Floridin. Chem. Rev. 1904, 116, 145.

Author describes floridin properties and uses in refining of mineral, animal and vegetable oils.

The advantages of mixing method author sees in:

Rapidity of operation (20 minutes of stirring, all operation one-two hours) and in using fine powdered floridin.

The simplicity of "filtration method," according to the author, is a reason for its practical use.

Floridin bleaches light oils at ordinary temperatures; cylinder oils at 140-150 degrees.

Floridin should be calcined, before using, at 300-500 degrees Centigrade in absence of air.

Lob, A., Oil Bleaching by Mixing with Fullers Earth, etc. Chem. Rev. 1908, 80.

Author describes refining of oil and waxes (mineral, vegetable, etc.) with fullers earth, etc., and finds that 5-15 minutes of stirring oil with decolorizer is not enough; after 2-3 hours, progress in bleaching can be observed. Author attracts attention to the fact that if oil (mineral or vegetable or paraffin) is bleached with fullers earth and black fullers earth residue extracted with benzine, the extracted oil is at least as light colored as raffinate. From this author concludes there is a chemical affinity between "mineral decolorizers" and impurities absorbed by them.

Day, D., Bleaching Vegetable Oils by Mixing with Fullers Earth. J. Franklin Institute, 1900, 215-223.

"The common practice with the mineral oils is . . . the crude black mineral oils are allowed to percolate very slowly With the vegetable oils the process is radically different. The oil is heated to beyond boiling point of water, in large tanks, to which 5-10 per cent of fullers earth is then added and the mixture vigorously stirred for 20 minutes and then filtered off through bag filters.

Graefe, E., Bleaching Oils, etc., by Mixing with Fullers Earth, etc. Petroleum Z. 1907, III, 292.

If instead of filtration, agitation of oil with fullers earth, etc., is used the opposite current principle is not so convenient as in case of filtration, but it is not excluded. Both processes (filtration and mixing) are now in use. For filtration granulated fullers earth is more suitable; for agitation, finely powdered. Filtration meets some difficulties with viscous oils, paraffin, lubricants, etc.

Mixing is operated in tank with a mechanical stirrer or with air current agitation. The bleaching powder, etc., is added not all at once, but gradually, spraying on the surface of the oil. The mixing continues 5-15 minutes and the mixture is sent to filter press, etc.

Lambe, F., Sterry A. and Fordred, J., Bleaching Mineral Oil, etc., by Mixing with Fullers Earth, etc. English Patents 610-1868, 648-1868, 2,356-1868.

Hydrocarbon oils, paraffin, animal and vegetable oils, solid or liquid hydrocarbons, etc., are agitated with fullers earth for the purpose of bleaching and refining. The oils, etc., can be refined preliminarily with sulphuric acid and stirred with fullers earth. If suitable, the oils, etc., can be first distilled or cracked in presence of fullers earth and the distillates bleached and refined as above. The invention covers fullers earth, clay, marl, etc., as refining for oils, etc., or other distillates. First patent (610) covers the process for "Paraffin;" second patent (648) covers the process for "Hydrocarbon Oils;" third patent (2,356) covers the process for "Animal and Vegetable Oils, Fats, Fatty, Ac., Waxes, Resins, Essential Oils, Balsams and Solid and Liquid Hydrocarbons."

Ofenheim, Bleaching Oils, Paraffin, etc., by Mixing with Fullers Earth, Clay, etc. German Patents 9,981 (23) 1880; 9,291 (23) 1880; 15,058 (23) 1881. Auszuge 1880, 228, 307; 1881, 613.

Sauer, J. N. (Belgium), Bleaching Oils, etc., by Mixing with Fullers Earth, etc. French Patent 531,986, 1922; German Patent 321,766 (12-d) 1920; United States Patent applied for March 5, 1920.

The apparatus is constructed for continuous operation of bleaching liquids by mixing them with bleaching clays, etc., and filtering in the same apparatus or battery of apparatus (16 pp. of text and 6 pp. of designs.)

Prutzman, P. W., Assignor to General Petroleum Corp., Oil Bleaching with Montmorillonite. United States Patents 1,397, 113, 1921. P. Soc. Chem. Ind. 1922, 5-A.

The mineral montmorillonite (a hydrous Al-silicate) is treated with acid, washed, dried and pulverized and used for oil bleaching.

Manning, F. W., Refining with Fullers Earth. United States, 1,504,772, 1924 (on file.)

Oils are quickly mixed with fine fullers earth, then quickly filtered from the earth under heavy pressure and displacing residual oil by naphtha introduced under pressure. Design of apparatus is given.

Clark, I. A., Assigned to Producers & Refiners Co., Refining with Fullers Earth. United States 1,533,060, 1925. File.

Fullers earth or any other clay is washed with water and used in paste form for mixing with oil at temperature above 100 degrees Centigrade. In such a matter pores of the clay are purified, some siilicates of the clays are hydrated and made more efficient in oil refining.

Prutzman, P. W., and Bibra, C. J. von, Refining with Fullers Earth. English Patent 227, 177. British J. 1925.

Fullers earth is treated with sulfuric acid and after washing moist paste obtained is used for refining oils. The paste is mixed with oil and is heated until water is evaporated.

Bollmann, H., Refining with Fullers Earth. English Patent 231,126, 1925

file; German Patent 412,769, 1925. Zentr. 1925, II, 365.

Oil or fat is mixed with aluminum silicates, fullers earth, etc., in a tube with strong agitation and then discharged into a centrifuge. C. F. Bollman No. 3,719.

Prutzman, P. W., Refining with Fullers Earth. United States 1,547,682, 1925. File.

Oil is decolorized on heating it with fullers earth, etc.

Manning, F. W., Refining with Fullers Earth. United States 1,552,072, 1925. File.

An apparatus for refining of oils with finely powdered fullers earth is described.

Prutzman, P. W., Refining with Fullers Earth. United States 1,551,909, 1925. File.

Air is displaced by indifferent gases from the apparatus for refining of oils with fullers earth, etc.

Baylis, W. S., Refining with Fullers Earth, etc. American Chemical Society Meeting August 3, 1925.

Vice president of Filtrol company describes use of his acid treated clay, from Death Valley, in refining of petroleum products.

Stratford, C. W., Refining with Fullers Earth. Can. P. 251, 698, 1925 (Can. P. Rec.)

Hot decolorizing agent is mixed with hot oil and the mixture is passed through a battery of containers to a filter.

Rosenbaum, R. R., Separating Paraffin or Asphalt from Petroleum Residuum. United States 1,278,023, September 3. Chemical Abstracts, Vol. 12, No. 22.

Petroleum residuum containing paraffin or asphalt is heated and mixed with fullers earth or other comminuted absorbent material to give a large surface exposure and mixture is then brought into contact with cooling surfaces to cause congealing and hardening of the paraffin or asphalt content, treated with a solvent such as cold gasoline, which will not dissolve the paraffin or asphalt but which will dissolve the other hydrocarbons present and the soln. and paraffin or asphalt are then successively separated from the absorbent material.

OIL BOARD HEARS HUGHES FOR INSTITUTE

(Continued from Page 29)

slight advantage to the country unless it were adopted by the states having the principal oil production; second, because endeavors by legislation to curtail production would be injurious and unacceptable unless such regulation were substantially uniform; third, because it is most improbable that the states could be led to take action which would interfere with production to any great extent within their respective borders and thus be regarded as limiting their prosperity, and, fourth, because the constitutional difficulties in interfering with the production of oil on private properties, so as to provide an effective limitation, would be serious. . . .

"But whatever may be said on the various points that are so ably stressed in support of the policy of the Federal requirement of unit operation of pools, it still remains clear that such legislation, in time of peace, relating merely to production within the states (outside of the Indian lands) does not lie within the constitutional authority of Congress.

"It may be added that if the oil producing states desire to promote a policy of conservation, aimed at preserving the oil in the ground until it is needed, and are not disposed, or are found to be without the constitutional power under the Fourteenth Amendment, to go to the extent of enforcing the common action of owners, or what is called the unit operation of pools, it would still be possible for them to promote voluntary co-operation, in the light of economic conditions, by qualifying or limiting the state statutes which prohibit such combinations. Here, as in the case of the regulation by Congress of interstate commerce, there is a test of the real desire of the people, that is, whether there shall be competitive production of oil, or an opportunity for co-operation among owners in order to conserve the oil in the ground; a co-operation, of course, to be allowed only under conditions which would insure proper official scrutiny but still would be aimed at the curtailment of production rather than at the stimulation of production by insistence upon competitive effort.

"Unless the Federal Government and State Governments are willing to encourage voluntary co-operation, to deal with the problem of production from an economic standpoint, it would seem to be futile to discuss a policy of conserving oil in the ground."

This summarizes the legal features of Mr. Hughes' statement, which features were definitely the most important part of his contribution to the subject of petroleum conservation.

Mr. Doherty's Comments

At the conclusion of Mr. Hughes' address Chairman Work said: "Representing the American Petroleum Institute the board should assume, I take it, that you represent the composite mind of the institute on the major problems, allowing, of course, for the ramifications which always arise when many minds meet. Your contribution will be of great interest to the public, as well as a service to this board."

The chairman then called upon H. L. Doherty.

Mr. Doherty: I did not ask specifically to speak but did ask permission to speak if I was unable to agree with the presentation made by Mr. Hughes. I do not totally disagree with it, but I do disagree with it in nearly all of its important points. I am sorry Mr. Hughes did not remain because I would have liked to have cleared up some of the things that might lead to a better determination of this subject.

In all of the statements that I have made on this whole subject of oil and the conservation of oil and the waste of oil, there is nothing that I have any wish to retract, and on the other hand, I do not wish to reiterate and burden the record with statements that I have already made.

I thought it was the consensus of opinion of both sides of this controversy that the report of the Committee of Eleven was to be buried. However, I understand now that Mr. Hughes comes forward and endorses that report. If that report is to be the basis of the majority of the petroleum industries' answers, I think they ought either to endorse it and say they stand by that report cover to cover, or else be very specific as to just what they want to reject.

Disagrees With Hughes

Mr. Hughes has presented a very, very long treatise on the report of the Committee of Eleven and a justification of it, and also the oil business in general. He has also tried to tell you what the law is on this case and what the Constitution of the United States is. On none of the important things that he has brought up can I agree with him. Of course I assume that I must be wrong with so many in opposition to me, but I do want to call your attention to this fact: I have come forward on my side of this controversy and have presented specific, definite recommendations to your board.

Now I would urge that you secure from the others who take an opposite position specific and definite recommendations. If it is the position of these men that oil is so plentiful, that there is no need for conservation, and that you men should immediately ask for your discharge, I would like to see these men go on record in no unmistakable terms. I don't want to dodge later on if five years from now we have a serious shortage of oil. I am perfectly willing to go on record and have gone on record, and I would like to see everybody go on record as a test of their sincerity in this matter, of what they really do believe.

Now I want to call your attention to the fact that before this controversy arose, practically every oil man in the business predicted that we could not long continue to produce oil at the present rate. Since this controversy has arisen, many of the oil men tell you that there is no chance for a shortage of petroleum, that we have a great deal greater risk in the matter of food and clothing and things of that sort.

The Committee of Eleven has written a report; the directors of the American Petroleum Institute has endorsed that report. Judge Hughes has come in here with an article that took him upwards of an hour and a half to read, but I can't see where these men have come in with anything definite or constructive or co-operative.

I am going to ask—instead of trying to reply this morning to this very lengthy presentation made by Judge Hughes, and I started, by the way, to make notes and then I realized that I could not make notes and possibly attempt to answer anything as long as that—so I am going to ask you to be permitted to answer that with a written communication, unless for some reason you have other public hearings. Then I will be glad to come here and remain for these questions.

To File Written Reply

With your permission, I will file a written reply to the points in Mr. Hughes' treatise with which I do not agree. While he and other men who have advised with him—and let me say this so you will have this matter straight—Mr. Hughes comes here, and you may think that he is making a nonpartisan presentation—and he may believe that he is—but I am the only member of the American Petroleum Institute who did not go on record that we had an abundance of petroleum. I am the one man who said that we ought to adopt conservation measures and I have always said that there is no assurance that we have an adequate supply of petroleum or that this supply can be depended upon for any length of time ahead. I have said—and I repeat—that if we were to get into another war within three years, there is no assurance that we would have the petroleum necessary to carry us through that war without embarrassment. I repeat that and believe it.

Now, Mr. Hughes presents to you in a way that was very impressive—and Mr. Hughes' presentations are always impressive—the position of the petroleum industry, and yet he never consulted me to find out my views, and I am the one dissenter and have written more on it than anybody else. I don't know whether he got my views through the eyes and mouth of any of my opponents or not, so if he had wanted to make a fair and nonpartisan statement, I think one of the first men he would have wanted to confer with would have been myself.

I want to reply to Judge Hughes and I want to do it in writing. I want to strongly urge your permission, because I am very much interested in this subject, especially now that so much has been said in opposition to what I have said. I want to strongly urge you gentlemen making up this commission to ask these gentlemen to be specific and tell you what you should do. If their position is that there is so much petroleum that there is no need for conservation, and that you men ought to discharge yourselves or put in a final report and get out, I would like to see them take that position, because I would like to answer whatever their position is and make it definite rather than talk about things that have nothing to do with the final determination of what shall be done.

Stands by His Plan

In closing I want to say that every statement I have made I still believe in and I am still going to reiterate. I still maintain that there is need for conservation, that is, that there is no proof that we have an adequate supply of petroleum, and in the face of Judge Hughes I want to say that petroleum is an essential munition of war, that in my opinion the Federal Government is justified in legislating as to the production of oil because it is the only munition of war that can't be conserved by a mere change of laws.

Chairman Work: Then, with your consent, we have your permission to mail a copy of these remarks to Justice Hughes. Then you will have opportunity to file your reply, what would have been your reply in writing.

Mr. Doherty: Yes, the same as I would have done if he had furnished me with his paper before this hearing.

Leod D. Becker, representing the American Oil Bureau Association of New York, declared that the consumer through price holds in his hands the key to the determination of the economical use of oil and the economical use of oil is its true conservation.

The use of oil burners, he said, is increasing at an estimated rate of 250 per cent a year. This means that an increasingly large percentage of the total fuel oil produced will be required for domestic burner fuel. Of every 100 bbls. of oil produced 4½ bbls. are now used for domestic heating.

"Whether oil will be burned in industry or in the household depends on price," said Mr. Baker.

Hjalmar Nilsson, chief oil inspector for the State of Minnesota, devoted his time to discussing the details of the oil inspection law of his state, which he regards as the best in the country. They had built up a fine system of roads from the oil tax and that good work was still going on. Their inspection service had given them a uniform quality of gasoline throughout the state.

Conclusion of Hearing

At the conclusion of the hearing of these witnesses whose names had been announced, Secretary Work gave anyone who desired an opportunity to address the board and no one desiring to accept this invitation the board adjourned.

Among the audience at the hearing were the following:

W. S. Farish, president, American Petroleum Institute and president Humble Oil & Refining Co., Houston.

E. W. Marland, president, Marland Oil Co., Ponca City, Okla.

Edward Prizer, chairman, Vacuum Oil Co., New York.

George W. Davison, president, Gulf Oil Corp., Pittsburgh.

J. C. Donnell, president, Ohio Oil Co., Findlay, Ohio.

J. F. Lucey, Lucey Petroleum Corp., Dallas, Tex.

E. W. Sinclair, president, Sinclair Consolidated Oil Corp., New York City.

J. W. Van Dyke, president, Atlantic Refining Co., Philadelphia.

Oscar C. Sutro, Standard Oil Co. of California, San Francisco.

E. W. Clark, vice president, Standard Oil Co. of New Jersey, New York.

Col. J. W. Zevely, Sinclair Consolidated Oil Corp., New York.

R. L. Welch, general secretary and counsel, American Petroleum Institute, New York.

R. P. Anderson, technologist, American Petroleum Institute, New York.

W. N. Irish, vice president, Atlantic Refining Co., Philadelphia.

Fayette B. Dow, National Petroleum Association, and Western Petroleum Refiners Association, Washington, D. C.

Dr. Van H. Manning, Pan American Petroleum & Transport Co., New York.

Hon. William Spry, commissioner, General Land Office, Washington.

Hon. Charles Evans Hughes, representing American Petroleum Institute.

Henry L. Doherty, Henry L. Doherty, New York City.

Leod D. Becker, American Oil Burner Association, New York City.

Hjalmar Nilsson, chief oil inspector, State of Minnesota.

A. J. Kraemer, assistant petroleum engineer, Washington, D. C.

H. H. Hill, chief petroleum engineer, Bureau of Mines, Washington, D. C.

Rear Admiral Colby M. Chester, U. S. Navy, retired.

W. C. Mendenhall, chief geologist, Geological Survey.

Hon. Philip P. Campbell, Washington, D. C.

Frank M. Brewster, assistant chief petroleum engineer, Bureau of Mines, Washington, D. C.

R. D. Benson, Tidewater Oil Co.

Charles Suhr, Pennzoil, Oil City, Pa.

Colonel Brookings, U. S. Chamber of Commerce.

XUM

UNIFORM ACCOUNTING MEETING IN TULSA

A meeting of representatives of the committee on uniform methods of oil accounting of the American Petroleum Institute with representatives of various producers is scheduled to be held beginning June 8 at the offices of the Mid-Continent Oil & Gas Association at Tulsa. The committee, which is headed by M. W. Mattison, director of the division of taxation and accounting of the institute, has started work on operating accounts and is taking up first the construction of a chart covering production operations. H. G. Humphreys, general aditor of the Skelly Oil Co., has been in New York for some little time developing the subject for presentation at the Tulsa meeting and suggestions and criticism of the industry are invited.

GENEROUS PRICES PAID FOR PANHANDLE LEASES

(Continued from Page 30)

where he will get his gas, and it is believed he is banking on the Deep Rock Oil & Gas Co.'s well in Hartley County producing enough wet gas to supply the plant.

The Humble Oil & Refining Co. has purchased the Lee Blivins north 320 acres of Section 93 and the north 320 acres of Section 95 in Block 46, H. & T. C. Survey. The reported purchase price was $112,000.

The McMan Oil & Gas Co. has purchased the east half of the Section 13, the southeast quarter of Section 10, Block 1, Poitevant Survey, Moore County, north of the Canadian River, and the west half of Section 1, Block J, H. & G. N. Survey, and the west half of the southwest quarter of the Malla Survey, and the southeast quarter of Archer Survey, paying $100 per acre for each of the parcels.

The Humble Oil & Refiining Co. is increasing its field force here and will establish a Panhandle headquarters with geologists and production and field scouts.

It is understood that the Gulf Production Co. in its leasing campaign is playing east and southeast of Dumas as promising territory. They are buying leases on the strength of the geological surveys of that trend which were said to have been made with the aid of scientific instruments.

MIRANDO-INGLESIDE LINE BEING PLANNED

HOUSTON, Tex., May 29.—R. V. Hanrahan, president of the Humble Pipe Line Co., a subsidiary of the Humble Oil & Refining Co., announces the company will lay a trunk line from the Mirando district to seaboard at Ingleside. The distance is 110 miles. It will be an 8-inch linie, starting at Bruni, Webb County, and running eastward to a point between Corpus Christi and Aransas Pass. Work will start at once and it is expected to have the line in operation by September 1. The cost will be over $1,000,000.

The company has just completed gathering lines to the various pools in Webb, Jim Hogg and Duval Counties and is taking care of more than 4,000 bbls. per day. The gross production of the district varies between 8,000 and 10,000 bbls. per day. May 15 the Humble company posted $1,25 which was met by the Magnolia Petroleum Co., Crown Central Petroleum Corp., Texpata Pipe Line Co. and other independent buyers. It is the highest price posted in the history of the field.

The Magnolia Pipe Line Co. is making a survey for a possible extension of its Luling 8-inch line to the Mirando Field. The distance is about 180 miles.

The Humble Pipe Line Co. has suspended work on its proposed line from West Columbia westward to the Boling Pool, a distance of 22 miles.

CITY CAN SELL GASOLINE

LINCOLN, Nebr., June 1.—For the second time the Nebraska Supreme Court has upheld the right of the city of Lincoln to sell gasoline and oil at retail at cost to its citizens. The District Court last Saturday granted an injunction restraining the city from selling to any one not a citizen of Lincoln. Two judges out of seven rendered strong dissenting opinion. The Standard Oil Co., it is said, will appeal to the United States Supreme Court. The second decision was made on a motion for a rehearing. This was overruled today.

OIL ASSOCIATION MAY ENTER PACIFIC COAST

SAN FRANCISCO, Calif., May 28.—Being of the opinion that the operations of the Oil Insurance Association of Chicago in the Pacific Coast field is a company and not a board matter, but that the extrance of the association would help the writing of oil insurance, the Board of Fire Underwriters of the Pacific has passed a resolution stating that it will assist, facilitate and co-operate in rates and underwriting with the association if it decides to establish itself here.

The members of the board felt that as only 73 companies are members of the oil association out of the 168 which are members of the board, they should not legislate in the matter. Many of the members of the board, however, feel that operation here by the oil association would be of great value in the writing of the business because of its experience in other fields and its highly trained corps of engineers.

H. M. Carmichael, manager of the oil association, who has been here with J. M. Thomas, president, will prepare a report on the situation which will be submitted to the executive committee of the association and then to the member companies and a decision will be reached as to whether this field will be entered.

NORTH CENTRAL TEXAS

(Continued from Page 40)

Co.'s No. 1 W. T. Scott was plugged back from 3,605 feet to 2,735 feet and was cleaning out 20 feet off bottom. It had 1,700 feet of fluid in the hole and flowed while cleaning out and agitating. Fred Hyer's No. 1 H. R. Clay was completed for 10 bbls. initially at 1,508-12 and 1,456-63 feet. Lockhart & Carey's No. 1 Scott was rigging up; No. 1 Otis Chalk had a machine on the ground; and No. 1 Dora Roberts had rig material on the ground. The Marland Oil Co.'s No. 1 Chalk was rigging up, as was also the Magnolia Petroleum Co.'s No. 1 Chalk. Owens & Sloan's No. 2 Chalk was drilling at 450 feet. The Transcontinental Oil Co.'s No. 1 Roberts was drilling at 3,175 feet. It had a half bailer of sulphur water at 2,955-70 feet.

In Culberson County, the Deep Rock Oil Co.'s No. 1 Kloh & Rumsey was drilling in lime at 660 feet after a successful fishing job. The Pure Oil Co.'s No. 1 Quaid was drilling at 3,250 feet, having made only 35 feet the past week.

In Loving County, the Lockhart & Co. had a rig up for No. 1 R. L. Allen. The P. V. Petroleum Co.'s No. 1 Chapman-Wheat was temporarily abandoned at 4,272 feet. The fuel from this well is to be used in drilling No. 1 Allen.

In Brown County, Inglewright, Danciger and others' No. 3 Edington was good for 175 bbls. at 1,255-63 feet. The Humble Oil & Refining Co.'s No. 1-B J. C. Kilgore was estimated good for 60 bbls. after a 7-quart shot at 1,147-54 feet. The J. K. Hughes Development Co.'s No. 1 Kellar made 40 bbls. after a shot of 30 quarts in sand at 1,231-56 feet; No. 10 Arledge was a 200-bbl. completion at 1,264-94 feet; and No. 9 Arledge made 75 bbls. at 1,264-94 feet.

In Coleman County, a new producer was added to the Dibrell Pool. It is the Midwest Exploration Co.'s No. 2-A Dibrell and is good for 125 bbls. at 1,907-27 feet; No. 3-A is rigging up; No. 4-A is a rig; No. 1-B set 6-inch at 1,852 feet. The Midwest also has a rig up for No. 1 Morris.

In Reagan County, the Big Lake Oil Co.'s No. 64 University flowed 953 bbls. initially from sand topped at 2,936 feet. Top of the lime was at 2,835 feet and top of the salt was 1,080 feet.

In Crockett County, the Gulf Production Co.'s No. 3 Powell "A" swabbed 270 bbls. the first 24 hours from total depth of 2,683 feet; No. 2 swabbed 35 bbls. in 12 hours from 2,680 feet.

North Central Texas Completions

Wichita ounty

Humble Oil & Refining Co.'s No. 1 H. Willis, 15 bbls. at 277-85 feet; No. 2, 5 bbls. at 258-68 feet; No. 3, 5 bbls. at 257-68 feet; No. 4, 5 bbls. at 265-76 feet; No. 5, dry and abandoned at 284 feet; No. 6, 10 bbls. at 261-70 feet; No. 7, 10 bbls. at 256-63 feet; No. 8, 5 bbls. at 256-68 feet; No. 9, 5 bbls. at 260-69 feet; No. 10, dry and abandoned at 285 feet; No. 11, 5 bbls. at 255-72 feet.

Kemp, Bean & Jackson's No. 1 J. A. Kemp and others, dry and plugged at 1,850 feet; Magnolia Petroleum Co.'s No. 127 Reilly, 10 bbls. at 1,880-83 feet. E. J. Stump's No. 3 Dutton, dry at 1,840 feet. Apple & Brandeberry's No. 19 Jennings "A," 11 bbls. at 812-26 feet, total depth 830 feet. Chenault & Burleson's No. 2 Powell, dry and abandoned at 868 feet. Fidelity Oil Corp.'s No. 16 Peeler was temporarily abandoned at 500 feet. Humble Oil & Refining Co.'s No. 4 Mitchell-Waggoner, 11 bbls. at 769-76 feet. Larkin & Wilson's No. 2 Waggoner Brothers was a failure at 806 feet and Magnolia Petroleum Co.'s No. 70 Honaker was junked and abandoned at 1,630 feet. Magnolia's No. 21 Ramming "B" was dry and abandoned at 1,301 feet; W. B. Omohundro's No. 4 Chilson, dry at 1,312 feet; Panhandle Refining Co.'s No. 1 Powell, dry at 2,001 feet; Petroleum Production Co.'s No. 21 Allen & Kemp "B," dry at 1,780 feet. The Red River Oil Co.'s No. 21 Bywaters was plugged back from 1,490 feet to sand at 1,056-66 feet after it had been deepened from 1,080 feet, and was making 1 bbl. on the pump. Stump & Co.'s No. 1 Chilson, Block 21, made 15 bbls. oil and some water at 1,813-14 feet. Texhoma Oil & Refining Co.'s No. 6 Burnett "M" was dry and plugged at 1,958½ feet.

Wilbarger County

Empire Gas & Fuel Co.'s No. 31 Stephens, plugged back to 2,000 feet from 2,164 feet and made 25 bbls., 1,780-95 and 1,964-90 feet; Humble Oil & Refining Co.'s No. 44 Stephens, 150 bbls. at 2,393-2,410 feet; No. 4 Waggoner "M," 250 bbls. at 1,880-1,907 feet. Magnolia Petroleum Co.'s No. 49 Piper, 11 bbls. at 1,076-82 feet. Phillips Petroleum Co.'s No. 7 Waggoner "G," 200 bbls. at 1,865-85 feet, total depth 1,886 feet; No. 3 Waggoner "I," 30 bbls. at 2,586-89 feet, total depth 2,620 feet; No. 3 Waggoner "QQ," 210 bbls. at 1,901-17 feet; Roxana Petroleum Co.'s No. 7 Waggoner "A," 121 bbls. at 2,592-2,610 feet, total depth 2,625 feet.

Baylor County

Pandem Oil Corp.'s No. 1 Young "C" was dry and abandoned at 1,478 feet.

Archer County

Barkley & Meadows' No. 25 L. F. Wilson, 15 bbls. at 1,525-32 feet. L. T. Burns' No. 5 A. P. Jackson, 75 bbls. at 1,553-59 feet. Empire Gas & Fuel Co.'s No. 1 Plowman and others, dry and abandoned at 1,516 feet. Humble Oil & Refining Co.'s No. 7 L. F. Wilson, 40 bbls. at 870-900 feet; No. 2 L. F. Wilson "D," 15 bbls. at 1,393-97 feet and 1,401-11 feet, total depth 1,420 feet. A. W. Kollatt's No. 5 J. H. White was dry and abandoned at 1,610 feet; C. B. Long's No. 1 P. A. Newell, dry and plugged at 1,856 feet; Magnolia Petroleum Co.'s No. 1 J. M. Miller, junked and abandoned at 1,272 feet; Marland Oil Co. and Trahan's No. 1 Perkins and others, dry at 1,768 feet; McCarty Oil Co.'s No. 19 L. F. Wilson, 35 bbls. at 1,372-82 feet, total depth 1,384 feet; No. 26 L. F. Wilson "B," 30 bbls. at 858-62 and 866-904 feet, total depth 906 feet.

Shappell Oil Co.'s No. 3 L. F. Wilson "A" was dry and plugged at 1,750 feet; Texhoma Oil & Refining Co.'s No. 10 Hamilton, 73 bbls. at 1,809-13½ feet; White Eagle Oil & Refining Co.'s No. 2 L. L. Marcell, 20 bbls. at 1,573-79 feet; F. S. Whitman and others' No. 1 Ford was a failure at 1,135 feet. V. O. E. Wright's No. 5 W. N. Miller, 8 bbls. at 724½-33½ feet; Woodburn Oil Corp.'s No. 27 L. F. Wilson, 5 bbls. at 1,625-27 feet. Roy L. Carter's No. 6 Cowan Estate was plugged at 1,068 feet; Cook & Reeder's No. 1 J. D. Bridwell and others pumped 17 bbls. in 12 hours at 1,148-50 feet; Cosden-Consolidated Oil Co's No. 1 Herron was a failure at 1,110 feet. Hines and others' No. 1 Richardson, dry and abandoned; Lewis Oil Corp.'s No. 1 H. O. Prideaux, 25 bbls. at 657-80 feet. Madden and others' No. 1 Schlegel, dry and abandoned at 1,240 feet. Magnolia Petroleum Co.'s No. 2 Darilek, plugged at 1,586 feet; No. 15 Rogers swabbed 90 bbls. at 1,360-68 feet; Petroleum Producers Co.'s No. 1 Kunkel, 8 bbls. at 1,155-66 feet, total depth 1,173 feet; Shasta Oil Co.'s No. 1 Meade Estate made 10 bbls. of oil and an equal amount of water at 1,457-63 feet. Simms, Hammond & Hines' No. 1 Abercrombie was dry and plugged at 1,502 feet.

E. L. Smith Oil Co.'s No. 13 Cowan Estate made 10 bbls. at 1,062-67 feet; Sun Oil Co.'s No. 3 Brown was a 30-bbl. well at 1,147-57 feet after plugging back from 1,159 feet; No. 6 Kunkel, dry and abandoned at at 1,287 feet; United Producers Co.'s No. 1 Prideaux "B," 15 bbls. at 667-77 feet, total depth 686 feet. Whittiken and others' No. 1 Inmon and others, dry and abandoned at 875 feet.

Clay County

Howard Petroleum Co.'s No. 1 M. K. Inman was junked and abandoned at 555 feet. Winnipeg Oil Co.'s No. 1 R. M. Waggoner made 15 bbls. at 1,771-85 feet after plugging back from 1,805 to 1,797 feet.

Montague County

Benton Woods and others' No. 7 R. Hinds made 40 bbls. at 868-86 feet; Humble Oil & Refining Co.'s No. 2 R. Hinds, 103 bbls. at 919-28 feet; Owenwood Oil Corp.'s No. 1 J. B. Gist, dry and abandoned at 1,471 feet; Pure Oil Co.'s No. 3 J. W. Maddox "A," 40 bbls. at 931-60 feet; The Texas Company's No. 1 N. J. Howard, dry and abandoned at 1,590 feet; No. 2 Cunningham, 65 bbls. at 991-1,002 feet; No. 7 J. B. Oldham and others, 96 bbls. at 1,115-20 feet and 1,134-37 feet, total depth 1,141 feet. Texhohma Oil & Refining Co.'s No. 4 R. Hinds, 75 bbls. at 901-08, 909½-11 and 913-18 feet, total depth 920 feet.

Jack County

Baytex Oil Co.'s No. 1 Snedeker pumped 42 bbls. the first 12 hours at 782-85 feet. Murchison & Fail's No. 1 Rankin was temporarily abandoned at 2,502 feet. Richardson & Markley's No. 1 Sloan was dry and abandoned at 532 feet.

Young County

Atlantic Oil Producing Co.'s No. 3 Rachuig "B" swabbed at the rate of 100 bbls. and was being put on the pump at 1,158-67 feet. Barkley and others' No. Rogers swabbed at the rate of 150 bbls. and was also being put on the pump in sand at 859-62 feet. Bridwell & Heydrick's No. 4 Beardon was dry and abandoned at 1,310 feet; No. 5 made 85 bbls. at 1,072-80 feet. Bridwell & Mayfield's No. 1 Williams, 15 bbls. at 710-14 feet. Chenault & Lea's No. 1 Rachuig flowed and swabbed 450 bbls. at 1,164-72 feet; Howard Petroleum Co.'s No. 3 Stewart, 30 bbls. at 543-48 feet; No. 4, 20 bbls. at 541-49 feet. Howard, Duffield & Berlin's No. 17 Stewart, 25 bbls. at 541-49 feet. Humble Oil & Refining Co.'s No. 13 Mercer, 50 bbls. at 1,019-55 feet. Stafford & Hayes' No. 1 Wallace was dry and abandoned at 700 feet. Whitehead and others' No. 2 Belknap Coal Co. "B" was dry at 4,802 feet.

Garza County

Midwest Exploration Co.'s No. 1 N. N. Rogers was dry and abandoned at 3,381 feet.

Shackelford County

Carter and others' No. 2 Proctor was dry and plugged at 2,005 feet. Engle Brothers' No. 2 Matthews made 12 bbls. at 1,233-45 feet. Overlees' No. 1 Stevens, 48 bbls. at 1,014-20 feet.

Stephens County

McDonald's No. 3 Ball was good for 25 bbls. at 3,197-3,216 feet. Eidson and others' No. 2 Post, 50 bbls. with 9,000,000 feet of gas at 1,831-1,921 feet. Hanlon Gasoline Co.'s No. 1 Curry was dry

and abandoned at 3,260 feet. Gulf Production Co.'s No. 14 I. A. Stoker "D" pumped 19 bbls. from total depth of 3,143 feet.

Eastland County

Gulf Production Co.'s No. 1 J. D. Parsons "A" flowed 247 bbls. at 1,500-31 feet; No. 7 L. Kinnebrew made 2,040,000 feet of gas at 1,484 feet. Eastland Oil Co.'s No. 1 Armstrong heirs was dry and abandoned at 3,525 feet. Bateman & Campbell's No. 1 Mulloy made 75 bbls. at 3,052-2,121 feet.

Mitchell County

Mid-Kansas Oil & Gas Co.'s No. 1 Ellwood was a failure at 3,768 feet; California company's No. 4 Womack made 92 bbls. at 2,950-3,086 feet.

Howard County

Marland Oil Co.'s No. 1 O'Daniel made 30 bbls. at 2,640-3,040 feet, total depth 3,103 feet. Owens & Sloan's No. 1 Chalk pumped 38 bbls. at 1,577-86 feet.

Coleman County

Burke-Greis Oil Co. and Gwinnup's No. 5 Dibrell flowed 400 bbls. at 1,860-81 feet. Independent Oil & Gas Co.'s No. 2 Dibrell flowed 380 bbls. initially from sand at 1,860-83 feet, total depth 1,884 feet. Kirby Petroleum Co.'s No. 1 Dibrell made 100 bbls. at 1,918-48 feet. Mahlstedt Oil Co.'s No. 1 Overall was a failure at 1,054 feet. The Merry Brothers & Perini's No. 1 Kinney was dry and abandoned at 1,252 feet. White Eagle Oil & Refining Co.'s No. 1 Casey was also a duster at 1,683 feet.

Brown County

Barbour Oil Co.'s No. 1 Newton was dry and abandoned at 1,335 feet. Blair & Kell also plugged No. 3 Byrd at 1,348 feet; No. 4 Byrd was good for 15 bbls. at 1,302-12 feet, total depth 1,318 feet. J. S. Cosden's No. 1 Williams "A" made 40 bbls. at 1,160-65 feet; No. 2, 40 bbls. at 1,179-95 feet; No. 2 Williams, 35 bbls. at 1,140-48 feet, total depth 1,152 feet. Curry & Moore's No. 1 Prather was dry and abandoned at 1,342 feet. Fagg and others' No. 1 Butler made 10 bbls. at 1,300-18 feet. Gillman & McMurray's No. 7 Moore, 35 bbls. at 1,227-45 feet; Hickey and others' No. 1 Ward was dry and abandoned at 1,255 feet. J. K. Hughes' No. 8 Arledge, 175 bbls. at 1,273-1,303 feet. McCarter and others' No. 6 Allen, 100 bbls. at 1,120-31 feet; No. 8 Leatherwood was a failure at 1,170 feet. McLester Oil Co.'s No. 2 A. J. Woolridge "A" was dry and abandoned at 1,310 feet; No. 4 W. M. Woolridge, 150 bbls. at 1,222-49 feet; Midwest Exploration Co.'s No. 1 Suttles, 25 bbls. at 1,139-54 feet, total depth 1,156 feet. Shadbolt & Creighton's No. 1 Lewis, dry and abandoned at 1,505 feet. The Texas Company's No. 11 Dunn made 60 bbls. at 1,128-56 feet; No. 12 made 70 bbls. at 1,132-53 feet. Wilson's No. 1 J. Woolridge was dry and abandoned at 1,328 feet.

Upton County

Marland Oil Co.'s No. 2 Sanger Brothers pumped 10 bbls. at 2,180-2,245 feet.

Crockett County

Roxana Petroleum Corp.'s No. 1 Powell pumped 130 bbls. the first 15 hours at 2,658-63 feet. Gulf Production Co.'s No. 1 L. P. Powell "A" pumped 25 bbls. from total depth of 2,673 feet.

NORTH TEXAS

Production by Fields for Week Ending May 2

Electra

Atlantic Oil Production Co.	50
Empire Gas & Fuel Co.	651
Gulf Production Co.	1,014
Humble Oil & Ref. Co.	148
Magnolia Petroleum Co.	3,373
Panhandle Refining Co.	50
Phillips Petroleum Co.	17
Prairie Oil & Gas Co.	109
Rio Bravo Oil Co.	613
The Texas Company	3,398
Texhoma Oil Ref. Co.	1,379
Miscellaneous	5,803
Total	16,605

Burkburnett

Gulf Production Co.	440
Humble Oil & Ref. Co.	395
Magnolia Petroleum Co.	2,650
Panhandle Refining Co.	242
Prairie Oil & Gas Co.	28
Sinclair Oil & Gas Co.	56
Skelly Oil Co.	160
The Sun Oil Co.	57
The Texas Company	365
Texhoma Oil & Ref. Co.	560
Miscellaneous	7,389
Total	12,342

Iowa Park

Atlantic Oil Production Co.	85
Gulf Production Co.	109
Humble Oil & Ref. Co.	168
Magnolia Petroleum Co.	395
Panhandle Refining Co.	30
Roxana Petroleum Corp.	7
Simms Oil Co.	12
The Texas Company	245
Texhoma Oil & Ref. Co.	390
Miscellaneous	2,891
Total	4,332

Wilbarger

Atlantic Oil Production Co.	145
Empire Gas & Fuel Co.	1,103
Gulf Production Co.	39
Humble Oil & Ref. Co.	3,864
Phillips Petroleum Co.	4,301
Prairie Oil & Gas Co.	140
Roxana Petroleum Corp.	381
The Texas Company	25
Texhoma Oil & Ref. Co.	90
Miscellaneous	4,120
Total	14,208

Archer

Atlantic Oil Production Co.	371
Barnsdall Oil Co.	1,299
Cosden Co.	759
Empire Gas & Fuel Co.	711
Gulf Production Co.	3,296
Humble Oil & Refining Co.	1,519
Independent Oil & Gas Co.	15
Magonlia Petroleum Co.	1,520
Marland Oil Co.	455
Panhandle Refining Co.	130
Phillips Petroleum Co.	702
Prairie Oil & Gas Co.	2,339
Roxana Petroleum Corp.	373
Simms Oil Co.	600
Sun Oil Co.	354
The Texas Company	3,273
Texhoma Oil & Ref. Co.	3,348
Tidal Oil Co.	40
Miscellaneous	13,015
Total	34,119

Young

Cosden Co.	60
Gulf Production Co.	268
Humble Oil & Ref. Co.	313
Magnolia Petroleum Co.	178
Marland Oil Co.	1
Mid-Kansas Oil & Gas Co.	12
Panhandle Refining Co.	155
Phillips Petroleum Co.	20
Prairie Oil & Gas Co.	10
Roxana Petroleum Corp.	155
Simms Oil Co.	969
Sinclair Oil & Gas Co.	361
Sun Oil Co.	60
The Texas Company	453
Texhoma Oil & Ref. Co.	278
Tidal Oil Co.	150
Miscellaneous	2,991
Total	6,424

Stephens

Arkansas Fuel Oil Co.	25
Empire Gas & Fuel Co.	25
Gulf Production Co.	1,191
Humble Oil & Ref. Co.	675
Magnolia Petroleum Co.	375
Mid-Kansas Oil & Gas Co.	1,725
Phillips Petroleum Co.	375
Prairie Oil & Gas Co.	850
Republic Production Co.	125
Roxana Petroleum Corp.	50
Simms Oil Co.	25
Sinclair Oil & Gas Co.	75
Sun Oil Co.	150
The Texas Company	1,025
Texas & Pacific Coal & Oil Co.	1,150
Transcontinental	5
Miscellaneous	4,850
Total	12,696

Shackelford

Empire Gas & Fuel Co.	25
Humble Oil & Ref. Co.	305
Magnolia Petroleum Co.	50
Phillips Petroleum Co.	675
Prairie Oil & Gas Co.	10
The Texas Company	175
Texhoma Oil & Ref. Co.	75
Miscellaneous	4,955
Total	6,270

Ranger

Arkansas Fuel Oil Co.	5
Gulf Production Co.	495
Humble Oil & Ref. Co.	60
Magnolia Petroleum Co.	725
Mid-Kansas Oil Gas Co.	120
Panhandle Refining Co.	130
Phillips Petroleum Co.	5
Prairie Oil & Gas Co.	560
Republic Production Co.	50
Simms Oil Co.	25
Sinclair Oil & Gas Co.	325
The Texas Company	150
Texas Pacific Coal & Oil Co.	820
Transcontinental	25
Miscellaneous	2,425
Total	5,930

Eastland-Comanche

Empire Gas & Fuel Co.	10
Humble Oil & Ref. Co.	75
Magnolia Petroleum Co.	650
Mid-Kansas Oil & Gas Co.	150
Phillips Petroleum Co.	40
Prairie Oil & Gas Co.	75
Sinclair Oil & Gas Co.	20
Skelly Oil Co.	125
The Texas Company	95
Transcontinental	25
Miscellaneous	725
Total	1,990

Brown

Cosden Co.	525
Humble Oil & Ref. Co.	350
Phillips Petroleum Co.	75
Prairie Oil & Gas Co.	325
Simms Oil Co.	40
The Texas Company	525
Witherspoon Oil Co.	25
Miscellaneous	5,100
Total	6,965

Callahan

Humble Oil & Ref. Co.	3
Prairie Oil & Gas Co.	250
The Texas Company	175
Texas Pacific Coal & Oil Co.	25
Miscellaneous	3,175
Total	3,628

Miscellaneous Pools

Reagan County	32,063
Clay County	500
Montague County	3,072
Jack County	87
Throckmorton County	720
Baylor County	157
Palo Pinto County	550
Coleman County	1,360
Scurry County	58
Mitchell County	3,553
Crockett County	769
Upton County	376
Howard County	58
Crane	44
Total	43,367

Panhandle

Carson County	2,327
Hutchinson County	26,171
Wheeler County	90
Gray County	500
Potter County	30
Total	29,118
Total North Texas	197,994

Drilling Report
Hutchinson County

(Note: Only wells near the pay or having material change of status since last week are reported.)

The Coble Oil Co. and Whittenburg's No. 1 Whittenburg, Section 12, Block Y, drilling at 2,615 feet; No. 3, spudding. Continental Oil Co.'s No. 1 Whittenburg, spudding 80 feet. Delmar Oil Co.'s No. 1 Johnson Brothers, Section 20, Block Y, rig. Derby Oil Co.'s No. 1 Johnson, M. Whitley Survey, cementing 10-inch at 2,930 feet; No. 2, spudding.

Dixon Creek Oil Co.'s No. 4 Smith, Section 11, Block Y, running 6-inch, total depth 2,840 feet; No. 5 drilling 2,760 feet; No. 6, drilling 2,400 feet; No. 7, fishing 2,730 feet; No. 18, Section 14, Block Y, drilling 2,831 feet; No. 21, Section 12, Block Y, fishing 2,710 feet; No. 29, Section 5, Block Y, shut down 2,915 feet; No. 36, Section 5, spudding. Double 5 Oil Co.'s No. 1 E. Cockrell, drilling at 2,610 feet. Douglas Oil Co. and Cline's No. 1 Whittenburg, Section 15, Block X-02, drilling 2,845 feet, with first show of oil at that depth.

Gulf Production Co.'s No. 1 Christian, M. Anglin Survey, building rig; No. 9 Dial, fishing at 2,520 feet; No. 10, moving in tools; Nos. 1 and 2 E. B. Johnson, Section 65, Block 46, building rigs; No. 3, rigging up; No. 3 Whittenburg, Mary Whitley Survey, drilling at 150 feet; No. 4, rig; No. 5, rigging up; No. 1-A Whittenburg, Mary Whitley Survey, drilling at 200 feet; No. 2-A, drilling at 90 feet; No. 3-A, drilling at 75 feet; No. 4-A, rigging up; No. 2-D, Section 27, Block 47, rigging up; No. 1-E, and No. 2-E, building rigs. No. 1 fee (Gulf, Panhandle and Cline) rigging up; No. 1 E. Cockrell, still fishing.

Gibson Oil Corp.'s No. 1 Kingsland, Section 4, Block Y, shut down at 2,117 feet. The Gibson Oil Corp. and McMillan's No. 1 Kingsland, Section 6, Block B-4, bridged after an 80-quart shot at 2,877-2,905 feet. J. K. Hughes Development Co.'s No. 2-A Kingsland, Section 6, Block Y, drilling at 2,635 feet; No. 3-A, drilling at 2,240 feet; No. 4-A, spudding; No. 5-A is to be shot again; No. 6-A, drilling at 2,105 feet; No. 7-A, drilling at 400 feet; Nos. 9-A and 10-A spudding; No. 1-B Kingsland, Section 6, Block B-4, building rig.

Dan A. Japhet's No. 1 Smith, was drilling at 2,730 feet with 10,000,000 feet of gas at 2,705-30 feet.

There were no important changes in any of the 17 Marland Oil Co. tests. All were going ahead regularly.

McIlroy & Herring's No. 2 Smith, Section 5, Block Y, reached a total depth of 2,845 feet and had a show of oil at 2,805-45 feet; No. 3 was rigging up, and No. 4 spudding at 250 feet. The McMan Oil & Gas Co.'s No. 1 Smith, Section 5, Block Y, was fishing casing at 2,670 feet; No. 2 was shut down at 2,710 feet; No. 4, still swedging collapsed 8-inch, total depth 2,764 feet; No. 5, spudding; No. 1 Johnson-Whittington, Section 21, Block Y, spudding.

J. H. Middleton's No. 1 Smith, Section 15, Block Y, drilling at 2,800 feet; No. 2, drilling with 10,000,000 feet of gas at 2,690-2,721 feet. Midwest Exploration Co.'s No. 1 Johnson, Section 70, Block 46, spudding. Midwest & Holmes' No. 1 Smith, Section 5, Block Y, still fighting cave at 2,854 feet; No. 2, casing trouble at 2,770 feet. New Domain Oil Co.'s No. 2 Kingsland, drilling at 2,615 feet.

Phillips Petroleum Co.'s No. 1 Johnson-Barnum, Section 64, Block 46, total depth 2,735 feet, with show of oil, first show having been at 2,688-92 feet. The Phillips Petroleum Co. and Coble Oil Co.'s No. 4 Whittenburg, Section 12, Block Y, running 5-inch at 2,903 feet; No. 6, Section 13, drilling at 2,770 feet; No. 7, Section 12, fishing bit at 2,475 feet; No. 8, Section 12, drilling at 2,095 feet. Phillips Petroleum Co.'s No. 1 Johnson-Finklea, Mary Whitley Survey, running 6-inch at 2,875 feet. The Phillips Petroleum Co. and Gibson Oil Corp.'s No. 1 Whittenburg, M. Whitley Survey, drilling at 2,830 feet with 2,000,000 feet of gas. The Phillips Petroleum Co. and Parks Oil Co.'s No. 1 Whittenburg, Section 13, Block Y, drilling at 2,400 feet.

Riley & Holmes' No. 1 Smith, Section 11, Block Y, drilling at 2,560 feet. Roxana Petroleum Corp.'s No. 1 Lee Bivins, Section 86, Block 46, drilling at 2,350 feet with 4,000,000 feet of gas at 1,690-2,350 feet; No. 1-B Smith, Section 11, Block Y, drilling at 2,735 feet; No. 2-B, drilling at 2,742 feet. Skelly Oil Co.'s No. 2 Johnson "A", Section 4, Block B-4, shut down at 2,875 feet, repairing boiler; No. 3, moving boiler back, 2,530 feet; No. 3 Johnson, Section 22, drilling at 2,960 feet, with 1,000,000 feet of gas. Summit Oil Co.'s No. 2 Whittenburg, drilling at 2,800 feet (Section 13, Block Y). Travelers Oil Co.'s No. 2 Kingsland, Section 6, Block Y, drilling at 2,885 feet.

Panhandle First Reports
Week Ending May 29

Forty-one new locations and rigs were reported during the past week in Hutchinson County, also had one new location and Gray County two new rigs, making a total of 44 new operations added. Following are the locations, "corner" meaning 330 feet from each line:

Hutchinson County

Amerada Petroleum Corp.'s No. 1 Whittenburg, SW cor. NW, Section 89, Block Z, G. C. & S. F. Survey; No. 2, NW cor.; No. 3, NE cor. NW; No. 4, C SW SE NW, all in Section 89. Brooking & Kistler's No. 1 Whittenburg, SE cor. E half NE SE, Section 13, Block Y, M. & C. Survey. Currie Brothers and J. R. Phillips' No. 2 Smith, NW cor. E half SE, Section 14, Block Y, M. & C. Survey. Devonian Oil Co.'s No. 3 Johnson, SE cor. Tract 3, George E. Montgomery subdivision, Mary Whitley Survey; No. 4 Johnson, (was old No. 3) 330 feet north and east of SE cor. of Gulf Production Co.'s 81-acre lease and in Tract 3, rig up; No. 5, 517 feet from north and 330 feet from west lines of Tract 4, Mary Whitley Survey.

Dixon Creek Oil Co.'s No. 10 Smith, C NE NW NW, Section 11, Block Y, rig. E. J. Dunnigan and others' No. 1 Johnson Brothers, NE cor. SE SW, Section 21, Block Y, A. & B. Survey, rig; No. 2 Whittenburg, SW cor. S half SW, Section 13, Block Y, M. & C. Survey. Echo Oil Co.'s No. 3 Smith, NE cor. SW, Section 11, Block Y, M. & C. Survey. Goldeline Oil Co.'s No. 1 Whittenburg, SW cor. of north 160 acres of Section 27, Block 47, H. & T. C. Survey. Dan A. Japhet's No. 2 Smith, NE cor. SE, Section 11, Block Y, M. & C. Survey. Matheson & Dunn's No. 1 E. B. Jones, SE cor. Section 9, Block M-15, W. W. & S. Survey. S. D. McIlroy's No. 1 Smith, SE cor. SW NW, Section 14, Block Y, M. & C. Survey. S. D. and W. W. McIlroy's No. 4 Smith, NW cor. Section 14, Block Y, M. & C. Survey. Minnehoma Oil Co. and Kistler's No. 1 Johnson Brothers, SE cor. S half SW, Section 20, Block Y, M. & C. Survey. A. D. Morton's No. 3 Johnson Brothers, SW cor. Tract 9, Mary Whitley Survey, rig. Phillips Petroleum Co.'s No. 1 Johnson Brothers-Dorsett, SE cor. of north 160 acres of Section 64, Block 46, H. & T. C. Survey; No. 1 Johnson Brothers-Montford, SE cor. east 80 acres of north 160 acres, Section 66, Block 46, H. & T. C. Survey; No. 4 Whittenburg, NW cor. Section 12, Block Y, M. & C. Survey. The Phillips Petroleum Co. and Gibson's No. 6 Whittenburg, 330 feet east and south of SE cor. of north 160 acres of Section 64, Block 46 and in Section 63, Block 46, H. & T. C. Survey; No. 7 Whittenburg, 330 feet north and east of SE cor. north 160 acres of Section 64, and in Section 63, Block 46; both of these have rigs on the ground.

COMPANIES IN COLOMBIA; DRILLING AND EXPLORING

(Continued from Page 104)

will be the Standard Oil Co. of New Jersey owning the Tropical Oil Co., which is controlled directly by the Canadian International Co., in turn affiliated with the Standard of New Jersey, and the Gulf Oil Co.

Another important exploration company with large potentialities is the Interdepartmental Oil Co. of Medellin. This company is locally owned by Colombia Nationalists whose chief interest appears to be in buying and selling concessions and oil land titles. While of great potential importance in its power to control such concessions it is not believed this company will by its own efforts reach the exploitation stage with any of its oil land.

Pan American Interested

The Pan American Oil Exploration Co., owned by the Pan American Petroleum & Transport Co., which in turn is controlled by the Standard Oil Co. of Indiana, is given among the list of such corporations with a promising future.

The South American Petroleum Corp. of Delaware is under the control of a group of owners in the Carib Syndicate and there has been some recent conflict of interest between this company and the South American Oil Co., which is said to be in some way associated with the Leonard Oil Exploration Co. of Pittsburgh, Pa.

Recently local registrations of petroleum interests were published in the Diario Official. The South American Corp. of Delaware, it is stated, is controlled by the American Maracaibo Co. of Boston. Frank Finsthwart of 100 Broadway, New York City, is in charge of the New York office of this company.

The Carib Syndicate, Ltd., 40 Rector Street, New York City, is the owner of one-fourth interest in the Barco Concessions and one-fourth interest in the Colon Development, that is, the Colombian Petroleum Co. of Delaware and the Colon Development Co. of London, also having a 60 per cent interest in the Equatorial Oil Co. having property there.

There are two other oil companies which appear to be little understood, one the Prudential Oil Co., belonging to the Anthony Brady estate, 17 Battery Place, New York City, with oil lands near Honda. Another is the Emerald Oil Co., with concessionary oil lands near El Banco. Mr. Disher of Bartlesville, Okla., is reported to be the head of this company and he was formerly associated with H. L. Doherty & Co., in the Cities Service Corp.

It is stated Michael Spellacy, operating as the Matalone Oil Co., is interested in oil lands in the Magdalena River Valley near La Gloria and also to the east of the Amazon River and its tributary basins.

The Magdalena Syndicate, 90 West Street, New York City, owns large areas near Gamarra. This includes all the land previously owned by the Granada Oil Corp. of New York City.

Two new companies of English ownership have recently been reported as active in Colombia, but little appears to be known of them there.

Barco Concession

The Barco Concession was forfeited February 2, 1926, on the ground put forth by the Ministry of Industry that its terms had not been complied with. Negotiations are now on hand either to reinstate the concessions or to obtain a reissuance of the concession. This concession, as shown by the resolution of the Ministry of Industries declaring the Barco Concession to be forfeited, a copy of which has reached this country, was granted October 6, 1905, to Dr. Virgilio Barco and was approved by the executive power on October 31, 1905, and officially published in the "Diario Official." It was transferred to the Colombian Petroleum Co., promises having been granted to do so by the government by resolution of March 8, 1918, in virtue of which action there was introduced to the original agreement various modifications which the contractor and the concessionary company accepted. This concession was for a period of 50 years and was to elaborate and exploit the petroleum sources, coal and asphalt deposits belonging to the nation which it might discover in the waste lands of the department of Santander near the Venezuelan border within the following boundaries: "From the San Miguel River to the stream of San Miguelito and from this point along the mountain range to the Venezuelan frontier, following this to the stream of Aguacaliente, also known as Mitojuan, up this stream to the San Miguel River."

OIL FOR DOMESTIC HEAT FURTHERS CAUSE

(Continued from Page 90)

nual 150 per cent—fuel oil now burned in those industrial fields most inelastic as to price will be withdrawn or diverted from them for use in the domestic burner field, or for those industrial uses which have the widest elasticity of price.

We estimate that the consumption of oil for heating during 1926 will increase approximately 6,000,000 bbls. over 1925. With the estimated increase in burner installations, during 1927 this demand may increase 15,000,000 bbls. over 1926, with another increase of approximately 37,500,000 bbls. during 1928. These estimates may, of course, prove high, but they are in no sense improbable or unlikely.

The most capable petroleum economist I know attributed the strength of the whole market structure in the oil industry during the past fall and winter, principally to the increased demand for burning oils due to the growth in burner installations.

It is apparent that the oil burners for domestic and commercial heating may conceivably remove from the market all fuel oil said to compete with or replace the cheaper grades of coal on a price basis. Thus the increasing use of domestic oil burners becomes as with cracking and the Diesel type engine, an economic current which is furthering the best conservation of petroleum, that is, its economical use, by providing a better market for oils now sold in direct competition with coal on the basis of price; in such a market this oil will be sold on the basis of its superior value.

Improved Burners

Other forces are also at work within the oil burning industry, which are quietly, yet effectively, furthering the cause of oil conservation. The United States Navy has approved three oil burners for use in capitol ships. One of them was designed by navy engineers; the other two were designed by a distinguished engineer from the oil burning industry. Recently his firm redesigned one of its burners for use with pulverized coal so that many of the advantages of oil fuel are now available through the use of such equipment and pulverized coal. Extensive tests have been made with the pulverized coal adaptation of the oil burner and it is now being sold with guaranteed efficiencies as high as 89.2 per cent. With the present spread between the price of steam raising coal and oil, it is likely that such powdered coal burners will supplant many oil burning marine central station and power house installations, as well as be specified in many new installations of high pressure boilers in place of oil-fired equipment.

In the process industries where oil fuel is used principally for heat treating or for metal treating it has a superior utility value which in many operations and in many localities, makes it noncompetitive with any other fuels obtainable at its price, or near its price. In other fields of industrial use fuel oil has inherent advantages which cannot be secured from coal, and which give it higher utility value, for instance where cleanliness is much desired, as in bakeries, dairies or creameries.

The Bureau of Standards estimates the average efficiency of domestic heating plants throughout the country at 40 per cent for coal-fired plants and 60 per cent for oil-fired plants. Since efficiencies of 80 to 85 per cent are now secured in the more efficient domestic oil-buring installations and even in heating plants designed for coal, and because the industry is still in its infancy, it is reasonable to anticipate that improvements in burner and boiler design will increase the average efficiency of oil-fired plants to 85 per cent. It is apparent that with such an increase in efficiencies we might have an increase of 40 per cent in furnace oil prices without increasing the season's fuel bill for the consumer. Such improvements in efficiency will also materially increase the number of homes that may be heated from a given supply of burning oils.

MAGNOLIA BUYS LAND IN LULING DISTRICT

(Continued from Page 40)

duction reports to the state are for the last quarter of 1922. The peak of production for the North & South by quarters was in the third quarter of 1924 when a total of 2,452,287 bbls. was produced. The peak by days is said to have been reached on June 7, 1924, when North & South had a total of 42,085 bbls., which was about 70 per cent of the total of the field.

Production of the North & South Oil Co. in the Luling Field by quarters since the development of the field started in 1922 and the value of the oil recovered is as follows:

	Barrels	Value
1922—Fourth quarter	7,785	$ 2,335
1923—First quarter	5,614	2,807
Second quarter	8,673	4,336
Third quarter	354,076	177,038
Fourth quarter	844,024	422,012
1924—First quarter	1,026,606	649,328
Second quarter	2,304,443	1,658,277
Third quarter	2,452,287	2,309,898
Fourth quarter	2,188,246	2,085,105
1925—First quarter	1,789,609	1,875,889
Second quarter	1,603,716	1,926,595
Third quarter	1,473,465	1,665,015
Fourth quarter	1,451,897	1,714,025
1926—First quarter	1,517,580	1,893,420
Total	17,028,021	16,386,080

Statement by E. B. Davis

In a statement made in financial circles in New York early last year by Edgar B. Davis, president of the United North & South Oil Co., it was stated that the company had up to the close of 1924 expended a total of $6,867,765.69 in the acquisition and development of the Luling Field without resort to the investment of outside capital and that all of this with the exception of $176,862.63 has been recovered up to that time by the operation of the properties.

The company has recently completed the installation of electric power to operate its leases, the plant being one of the most elaborate in the state.

When the Edwards lime was proven productive oil men said the supply would be short lived and would not reach a total of 5,000,000 bbls. for the whole field. The first wells made some water and the field has been making water from the very first, water coming with the oil. Experienced men pointed to this as evidence that the life of the field would be short. They have since had to admit that the field is likely to produce for many years.

—Copyright by S C A D T A Scientific Dept., Bogota, Colombia.

Airplane view of camp of the Tropical Oil Co. at Barranca Bermeja, Colombia. From this camp the Andian National Pipe Line runs to the Atlantic seaboard at Cartagena.

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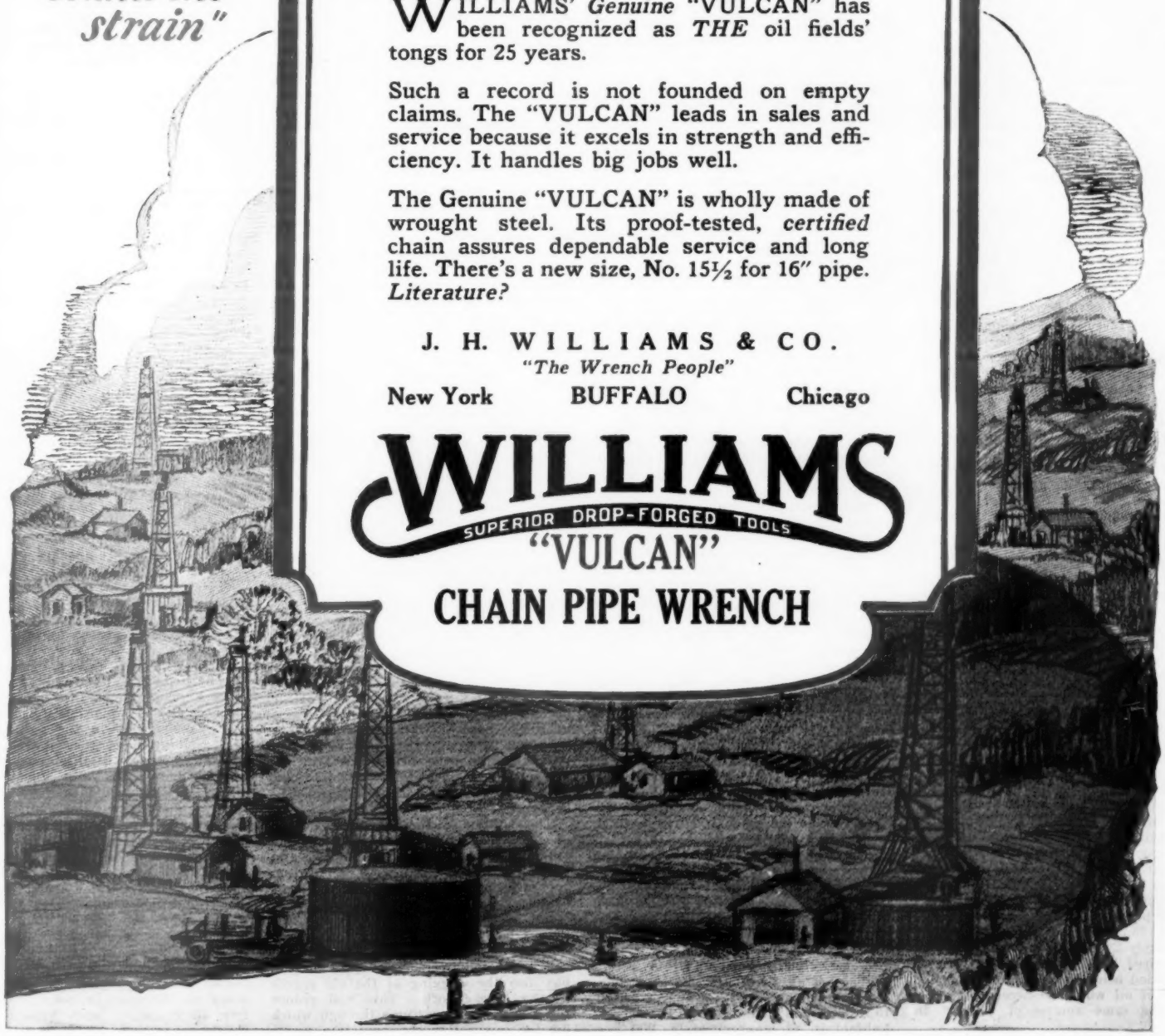

Economy of Oil As a Boiler Fuel

Results Obtained From Use of Fuel Oil Depend Largely on Specifications, Preheating, Cleanliness, Leaks and Draft Control

By Allen F. Brewer, M. E.
The Texas Company

The status of oil as a steam boiler fuel today is in many respects problematical. Developments over the last few years have indicated that neither crude petroleum nor its residual or distillate products can be relied upon as assured substitutes for solid fuels.

In effect fuel oil is a specialized fuel. In other words, its use must be decided upon not only on the matter of economics but also that of prior right. For we can justly state that certain phases of industry and power should receive preference. Foremost in this regard is, of course, the Navy. Fuel oil is an absolute naval essential, and as such must be conserved to meet requirements over as long a period as possible. Likewise in the merchant marine, especially on mail carrying vessels, has fuel oil proved to be one of the prime means of effecting economies of labor, materials, and, above all, time. In certain cases of railroad operation this prerogative also holds true especially in noncoal bearing localities, or wherever danger of forest fires, etc., caused by sparks or live coals must be guarded against. Fuel oil is an ideal steam boiler fuel, its use, however, should not be snatched at promiscuously. As with most ideals, it is difficult of attainment, and frequently a costly undertaking; for once adopted we are at the mercy of a market where the demand will usually far exceed the supply.

On the other hand, these statements should not be misconstrued as indicating that fuel oil is impossible for stationary boiler purposes. Within the area of oil fields, wherever tidewater delivery is possible, and in event of the possibility of obtaining delivery contracts based over preferably not less than two years time, fuel oil will be a most attractive proposition to the power plant management.

Wherever fuel oil is to be used as stationary boiler fuel, it must be fired with a maximum of care and economy, not only in the interests of your pocketbooks, but also the conservation of a vital national resource. We must heed such facts as:

1. The proper preheating of the oil prior to firing.
2. The cleanliness of both boiler and furnace to insure a maximum of heat transfer.
3. The reduction of air leaks in settings or around boiler headers.
4. The accurate control of the air required for combustion.
5. The prevention of oil leaks prior to delivery of the fuel, or within the furnace, from faulty joints, burner tips, etc.

Lack of observance of any of these will tend to reduce the unit evaporating power of the oil and necessitate the firing of additional fuel to meet the steam requirements.

A dollar-and-cents anaylsis of what might easily result will be of interest. For example, let us assume that an average grade of heavy Mexican crude oil is being used. Under normal conditions this will have an evaporative power of approximately 14 pounds of water per pound of oil. If the daily evaporation calculation indicates that this figure is lower, say 12 pounds of water, it is evident that we are using considerably more oil than necessary. If over a day's run the boilers are required to generate 2,800,000 pounds of steam at the average rate of 14 pounds of evaporation, approximately 200,000 pounds of oil would be required. In event of the rate of evaporation being but 12 pounds, 233,333 pounds of oil would be necessary to develop the same volume of steam. In other words, we would be wasting 33,333 pounds of oil or approximately 100 bbls. per day. If we assume that the cost of this oil is $1.50 per barrel, it is evident that the loss of $150 per day is too high to be overlooked.

*Paper read before the Mid-West Power Conference in Chicago.

CONSERVATION OF FUEL OIL

The purpose of this paper is to stress the importance of those several essential factors which vitally affect economy in the burning of fuel oil under steam boilers. The cost of steam generation is directly dependant upon the cost of fuel and the extent to which waste may occur. We therefore owe it to ourselves, our management and the world at large, to observe every possible care in the conservation of fuel oil, and in the firing of it to obtain the maximum efficiency from our boilers.

There are innumerable "pinks" and ideas in connection with the practical handling of fuel oils which must be observed, for ultimate efficiency depends upon the efficiency of firing. These points, however, have all been so extensively discussed in the technical press that the operator has really no excuse if he overlooks them. But he requires the co-operation of the management. He requires encouragement in study and recognition of effort in the improvement of plant efficiency. To understand this the management must become more conversant with the factors in this fuel oil problem. Hence the angle from which the subject has been approached and the emphasis on specifications, purchasing, preheating, cleanliness, leaks and draft control.

Matter of Preheating

The extent to which the fuel oil should be preheated will depend largely upon the viscosity and gravity. As a rule, the heavier or more viscous the oil the higher should be the firing temperature in order to insure effective pumping and atomization. In the case of crude oils such as certain heavy Mexican varieties, or topped crudes which originally contained a low percentage of lighter fractions, the requisite temperature may often be considerably above the flash point. For example, an oil of from 10 to 12 Baume gravity may require heating to 200 to 300 degrees Fahrenheit, but due to the low proportion of lighter products present, which would tend to flash at lower temperatures, the possibility of fire hazard being involved is remote. As a rule, flashing will only be prevalent in proportion to the rate at which these more volatile constituents are freed from the surface of the oil, and therefore there will be but little possibility of the entire volume of the oil flashing simultaneously. According to the grade of oil being fired, it will as a rule be advisable to experiment to a certain extent to determine the proper degree of preheating.

It will be interesting to note that relatively new grades of fuel oil have been developed in connection with new processes of handling and refining which run comparatively low in Baume gravity and also very low in viscosity. A recent analysis of an oil of this character indicated a Beaume gravity of approximately 15 degrees and a viscosity at 122 degrees Fahrenheit of approximately 200 sec. Saybolt. This would indicate a fluidity at normal temperature of an ordinary machine lubricating oil. Such a fuel oil would not require nearly as much preheating as a more viscous residual product of the same Baume gravity.

Atomization and the readiness with which the oil can be pumped are the general indications of the correct degree to heat a fuel oil. Too low an oil temperature will tend to preclude effective atomization and render pumping of heavier oils relatively difficult. Such products, if too sluggish, may flow intermittently and cause a decrease in fuel delivery to the burners. Other frequent results of insufficient heating may be excessive smoke due to incomplete combustion and the possibility of clogging the burner tips. Too high an oil temperature on the other hand may give rise to carbonization within the burner or oil lines and unsteady burning due to pulsation.

Preheating must, therefore, be given most careful consideration, and the type of heater be chosen with a view to obtaining the maximum of heat transfer. As a general rule, steam is used as the heating medium. In many cases, especially where higher gravity oils are being used, it will be practicable to employ exhaust steam for this purpose. With oils requiring a firing temperature above 200 degrees Fahrenheit it has been found best to use live steam. With an effective type of fuel oil heater of the double pipe coil type, multipass, or film type, etc., a minimum of steam will be required, and the cost of preheating reduced to a negligible factor in comparison with the fuel economies and increased efficiency which are made possible.

Cleanliness of Boiler

In the attainment of maximum fuel economy cleanliness of both furnace and boiler heating surfaces is another important factor. To be sure, the possibility of marked accumulations of dirt and soot will be less than when firing solid fuels. Futhermore there is no ash to contend with. But these very facts frequently lead to carelessness and the mistaken impression that cleaning boilers is of minor importance. Soot accumulates on the fire side of boiler heating surfaces, as well as possible water deposits within, must be corrected, else the rate of heat transfer and evaporation will be reduced to a marked degree.

An effective means of cleaning a boiler of soot is to install soot blowers and use them at regular intervals. In general they should be turned on at least once a day. Many engineers will advise their use once every watch or shift.

The matter of cleaning the water side of boilers will depend upon the nature of the feed water being used. A hard water will call for at least a weekly washing of the lowermost tubes and mud drum, with a thorough cleaning of scale once every six to eight weeks. The use of softer natural water or water that has been adequately treated will simplify this problem; little scale will accumulate, and a periodic washing perhaps every 10 days to two weeks will suffice.

The matter of furnace cleaning will depend to a large extent upon the degree to which the oil is atomized and the rate of firing. Imperfect atomization or the firing of globules of oil too large or heavy to be completely burned will result in coking, especially on the checkerwork below the burners due to accumulations of unburned fuel. Not only will this mean a direct loss in heat units, but also the clogging of the air spaces in the checkerwork. This will reduce the size of the appertures through which air for combustion can penetrate (especially in a steam or air atomized system) with consequent reduction in the rate of evaporation, the possible inability of the boiler to meet horse power requirements, and the necessity for increased fuel consumption.

Hard firing under higher overloads will tend to cause damage to brickwork and boiler settings, especially if a type of burner is used which is capable of throwing a relatively long flame. Impingement of this flame on the brickwork will exert more or less of blow torch action. Ultimately this will cause damage to the brickwork with the result that not only will the setting be weakened, but also the necessary curvature of the flame may be interfered with, reducing the complete distribution of the gases around the heating surfaces. Too long a flame in company with imperfectly atomized oil may also result in coking or carbon deposits on the brickwork. For these reasons the furnace should be examined at regular intervals, say whenever the boiler is down for complete cleaning of tubes, any coke deposits being removed and brickwork repaired wherever necessary.

Control of Air and Reduction of Leaks

Perhaps the most prevalent cause of reduced boiler efficiencies when burning fuel oil is the admission of too much excess air either intentionally or through leaks in the boiler setting. This will be indicated by low CO_2 readings in the flue gas analysis; for, although low CO_2 may also be due to the admission of too little air or improper mixing of air with the gases of combustion, as a rule too much air is the probable explanation.

In view of this fact, boiler settings, header joints and all other brickwork should be examined periodically. A very effective method is to make such an examination when the boilers are firing, using a lighted candle flame as the testing medium. As this flame is passed along the joints, if it is drawn inward it is an indication of an air leak. Such points should be accurately marked and promptly caulked or plugged with a suitable sealing medium such as asbestos wicking or cement.

Oil Leaks

Leaks from burner tips, pipe joints, fittings, heater connections and pumps must be guarded against; for not only will they mean a direct waste of oil but also a distinct fire hazard will be involved. Where oil piping is located in trenches, under ground (as from storage tanks), or elsewhere in dark or obscure parts of the plant, leaks may continue unobserved for some length of time, especially if on the tank side of the oil meter, provided one is installed. Occurring from parts of the system between the meter and boilers, however, they will be indicated, even if in no visible manner, by a low resultant evaporation.

As a general rule, fuel oil leaks will ultimately show up in the form of drippings, oozing out to the surroundings, or discoloration of the adjacent earth. Oil does not easily disappear, even if leaking directly into waterways or ditches. There should be little difficulty in determining that leakage is taking place and tracing it to point at fault.

The correction of oil leaks at joints or connections should be promptly taken care of, not only in the interests of economy, but also safety. Certain grades of oil give off appreciable amounts of vapor. Such vapors are heavier than air and therefore tend to collect in lower levels, such as ditches, drains or pits, to remain indefinitely unless these are thoroughly ventilated. The periodic hosing down of the average boiler room may free all drains of such vapors, but it should never be depended upon; there is too great a possibility of the vapors

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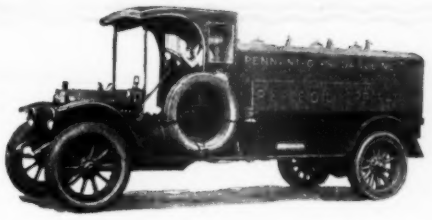

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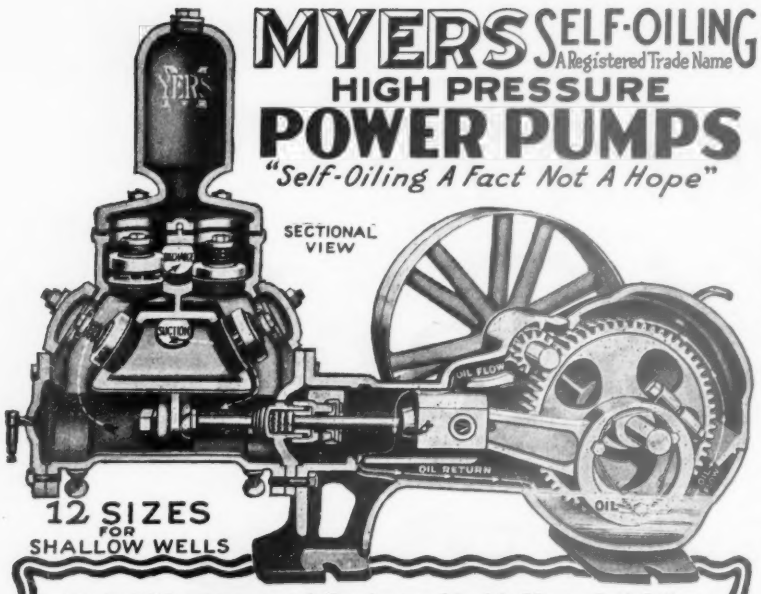

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lurking untouched, to become a hazard in case a naked flame of any description may chance to reach them.

An effective means of correcting oil leaks is to make up the faulty joints anew, using a suitable joint compound, a mixture of litharge and glycerin, or paper board soaked in shellac as a flange gasket. It is advisable never to tamper with tight joints unless unavoidable in the correction of leaky ones. When they must be broken they should be made up anew in the same careful manner as recommended for those wherein leaks have been found.

Specifications and Purchase

The question of the selection and purchase of fuel oils is of interest, especially from the viewpoint of specifications. The purpose of a specification is to insure the obtaining of the most suitable product at the best possible price. The tendency to impose undue limitations in writing fuel oil specifications often defeats the object in view. In consequence, very frequently certain grades of oils which are quite suited to the requirements involved may be excluded by an unwarranted specification in regard to fire point or calorific value, for example.

What we need is a broader view in fuel oil specifications and a greater confidence in the ability of the marketer. He above all should be conversant with market conditions, and the best judge as to the physical characteristics of fuel oils and their suitability for the purpose.

In brief: Will an oil meet the conditions in your plant, will it pump freely when subjected to your normal heater capacity, will it atomize properly at this temperature when passed through your burners, should be the gist of your specifications, rather than idealistic figures in regard to fire point, sulphur content, and calorific value. Those of us who have fired low gravity still bottoms, products which frequently run heavier than water and require heating to 300 degrees Fahrenheit or above, know how practicable it is to attain effective atomization and an evaporation of 14½ pounds of water per pound of fuel notwithstanding the fact that such products have a comparatively low calorific value and often run high in sulphur.

The same holds true with heavy Mexican crude oils. Their fire point is often well under the temperature necessary for preheating, they run high in sulphur and low in B.t.u.'s; yet they give us the results and approximate the ideal nearly to the same extent as a high gravity Navy grade of fuel oil. Relative to the latter, in the vernacular—"try and get it."

Then, too, we must take the nature of our burners into account. Mechanical burner systems of the marine or stationary type with relatively small burner orifices, and subjected to ordinances or rules in regard to the maximum degree of preheating, will of course require more attention to gravity and viscosity than will some of the more simple installations. An instance of a typical specification will emphasize this point. The request was simply for fuel oil, with no mention as to whether it was for use under steam boilers, in stationary or marine service, or in oil engines. They did, however, specify their ideas as to the gravity, viscosity, sulphur content, calorific value, and flash point, which in reality limited the market to the highest grade of distillate fuel oils. When pressed for further information, it developed that the system was an antiquated round flame, steam atomized set of burners installed under horizontal return tubular boilers. Where the impression was gained as to the need for such a high grade of oil was not divulged, yet the purchasers were unwittingly prepared to pay a premium simply through ignorance of how to buy their oil or perhaps some fear that the oil marketers might "gyp" them if they didn't write an ironclad specification. The fact of the matter is, most purchasers "gyp" themselves under such conditions. Furthermore, the sorry part of it is, if you try to offer them a lower gravity fuel oil and contend it is just as good, they often become mistrustful of your object.

The essential fact for the purchaser of fuel oil to remember is that the reputable oil marketer today is usually an expert in this matter of oil burning. "Necktie Salesmen" don't sell fuel oils; sound out the next fuel oil marketer you meet and you'll probably find he's a graduate engineer, perhaps holding a marine or stationary license, with a knowledge of combustion which you would do well to take advantage of.

The better procedure would therefore be to discard that specific mandatory attitude in which so many enter the oil market, and instead present the conditions and requirements before these experts for their advice. It costs no more and certainly will be beneficial to peace of mind and pocketbooks. It is not the object of the oil marketer to sell a rarity, or the highest priced fuel possible. He would lose out in the long run, for ultimately you would be bound to see the light and realize that specifications are secondary to information regarding your actual operating conditions, the design of your system, and the results desired. The logical consequence would be that you would then turn to a more scrupulous dealer whose aim is future business and repeat orders rather than a desire to sell you at high prices higher grades of oil than your conditions warrant.

INQUIRY ON GASOLINE REVIVED IN SENATE

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., May 29.—Senator Trammell, Democrat of Florida, called up in the Senate his resolution directing the Federal Trade Commission to investigate and report to the Senate on the advances recently made in the price of crude oil, gasoline, kerosene and other petroleum products. This resolution was introduced in the Senate March 12, 1925, so that the advances referred to were prior to that date. Now he thinks the condition he complained of is duplicated.

Senator Trammell declared that the oil companies are exacting millions and millions of dollars from the American people. He said that when there is an increase in New York there is an increase in Indiana and Florida.

At the request of Senator Curtis, of Kansas, the Republican leader, Senator Trammell agreed to hold off action on his resolution until next week.

BORNEO DRILLERS

CHATHAM, Ont., May 29.—A. E. Haley has returned to Petrolia, Ont., from the Borneo fields. Mr. Haley, whose headquarters were at Miri, Sarawak, left Borneo on February 19 and spent a month in England. He is planning to visit the western states before returning to Borneo in November. In 1912 he went to Java, returning home in 1916, and in October of the same year, left for Sumatra via Japan. In all he has spent three and one half years in Sumatra and six in Borneo. Petrolia drillers in the same field include James Brooks, James Brown. Joseph Patterson, Terry McGowan, Jack Josh, Bob Heal, Duncan McIntyre, Bloss Sutherland, James Nesbitt, William Gillespie and Alfred Webb.

PECHELBRONN EARNINGS

France's only oil wells, operated by the Pechelbronn Company in Alsace, yielded 11,220,000 francs net profit for 1925 against 9,694,000 for 1914. Dividend was 10 per cent, with 1,916,000 balance to be carried forward.

LEGAL

SALE OF NAVAJO AND UTE TRIBAL LEASES

On June 23, 1926, at 10 a.m. at Santa Fe, New Mexico, there will be offered for sale at public auction for a cash bonus in addition to royalty on production, exploratory oil and gas mining leases covering four tracts on the Navajo and two on the Ute Mountain Indian Reservation. Twelve other tracts on the Navajo Reservation will also be offered. Full information may be obtained from R. J. Bagerman, Special Commissioner to Negotiate with the Navajo Tribe of Indians, Santa Fe, New Mexico. E. E. McKean, Superintendent Consolidated Ute Agency, Ignacio, Colorado, or the Commissioner of Indian Affairs, Washington, D. C.

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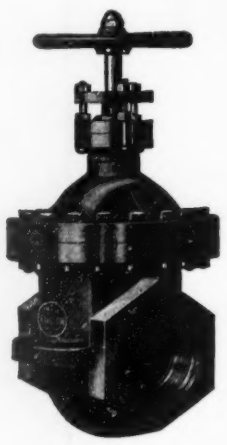

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NEW LOCATIONS IN NORTH TEXAS OUTSIDE THE PANHANDLE AREA

FORT WORTH, Tex., May 29.—New locations outside of the Panhandle area have been made as follows:

Wichita County

Apple & Brandeberry's No. 19 G. Jennings "A", 160 feet north and 200 feet east of SW cor. E half SE NE, Section 12, H. & T. B. Survey; No. 6 G. Jennings "B", 200 feet north and 150 feet west of SE cor. W half SE NE, same section. Chenault & Burleson's No. 2 J. L. Powell, 1,570 feet south and 1,591 feet east, NW cor. J. L. Powell tract, and located in Section 21, H. & G. N. Survey. Empire Gas & Fuel Co.'s No. 18 Pierce Oil Corp., 150 feet north and west of SE cor. of its 100-acre tract, Section 9, H. T. & B. Survey. Hawkins, Hester and others' No. 1 C. T. Marshall, 150 feet south and east, NW cor. north 31.7 acres, C. T. Marshall tract, and located in G. West Survey. Joe Howell's No. 6 T. L. Burnett, 150 feet south and 800 feet east, NW cor. north 49.1 acres of west 109.1 acres of south 287.59 acres, Section 9, H. T. & B. Survey. Humble Oil & Refining Co.'s No. 5 Waggoner-Mitchell, 150 feet north and 850 feet east, SW cor. Lot 14, M. A. Willis Survey. Petroleum Producing Co.'s No. 2 Allen & Kemp "D", 1,770 feet south and 950 feet east, NW cor. Block 28, Kemp Wichita Valley lands.

Wilbarger County

Empire Gas & Fuel Co.'s No. 39 W. H. Stephens, 1,075 feet north and 150 feet east, SW cor. NE NE, Section 83, Block 14, H. & T. C. Survey; No. 40, 647 feet north and 450 feet east, SW cor. NE NE; No. 41, 745 feet north and 200 feet east, SW cor. NE NE; No. 42, 445 feet north and 480 feet east, SW cor. NE NE; No. 43, 145 feet north and 510 feet east, SW cor. NE NE; No. 44, 416 feet south and 480 feet west, NE cor. SE NE, all in Section 83. Humble Oil & Refining Co.'s No. 47 W. H. Stephens, 750 feet north and 886 feet west, SE cor. NW, Section 83, Block 14; No. 48, 450 feet north and 1,186 feet west, SE cor. NW; No. 49, 561 feet south and 1,579 feet east, NW cor.; No. 13 W. T. Waggoner "H", 450 feet north and 490 feet west, SE cor. of 80-acre "H" lease, Section 46, Block 4, H. & T. C. Survey; No. 14, 450 feet north and 830 feet west, SE cor., same lease; No. 9 W. T. Waggoner "O", 450 feet north and 790 feet west, SE cor. 40-acre "O" lease, Section 47, Block 4. Wanderer Oil Co.'s No. 1 A. S. Ross, 150 feet north and west, SE cor. W half SE, Section 65, Block 15, H. & T. C. Survey.

Archer County

Arco Oil Co.'s No. 2 J. Stehlik, 150 feet south and west, NE cor. NW, Section 6, League 3, Denton County school lands. L. T. Burns' No. 5 A. P. Jackson, 150 feet north and east, SW cor. Lot 10, W. B. Aldridge Survey; No. 6, 810 feet north and 150 feet west, SE cor. Lot 10; No. 7, 150 feet north and west, SE cor. Lot 10; No. 8, 150 feet south and west, NE cor. Lot 10. Humble Oil & Refining Co.'s No. 1 A. P. Jackson, 150 feet sonth and east, NW cor. Lot 145, W. B. Aldridge Survey; No. 3 A. P. Nichols, 1,073 feet south and 650 feet east, NW cor. Lot 2, Section 33, A. T. N. C. L. Survey; No. 7 L. F. Wilson, 227 feet south and 150 feet west, NE cor. east 40 acres, Section 125, same survey. McCarty Oil Co.'s No. 20 L. F. Wilson, 750 feet south and 150 feet east, NW cor. Lot 5, Section 2, H. & T. C. Survey; No. 27 L. F. Wilson "B", 1,650 feet north and 150 feet east, SW cor. W half, north 160 acres, E. Hall Survey. Shaw and others' No. 5 L. F. Wilson "B", 200 feet north and 150 feet west, SE cor. Lot 400, Section 1, G. H. & H. Survey. Whitman and others' No. 2 Henry Ford, 770 feet north and 150 feet west, SE cor. W. Bryan Survey No. 1. White Eagle Oil & Refining Co.'s No. 3 L. L. Marcell, 490 feet north and 150 feet east, SW cor. Lot 47, Geleldine subdivision, and located in Madison County school lands.

Atlantic Oil Producing Co. and others' No. 6 Rachuig "A", 150 feet north and 1,650 feet west, SE cor. north 26 acres, NW, Section 4, B. B. B. & C. Survey. J. S. Barbee's No. 1 J. W. Lester, 150 feet north and west of SE cor. Section 2,451, T. E. & L. Survey. Dale Oil Corp.'s No. 1 T. J. Longley estate, 1,178 feet south and 2,399 feet east, NW cor. Section 1,836, T. E. & L. Survey. Hines and others' No. 1 C. E. Wilhelm, 150 feet south and east, NW cor. Section 2,420, T. E. & L. Survey. Ilseng Producing Co.'s No. 2 R. O. Prideaux, Lot 15, 150 feet north and 608 feet west, SE cor. Lot 15, W. J. Fraley subdivision of John Dorsey Survey. Magnolia Petroleum Co.'s No. 2 I. C. Little and others, 450 feet south and 150 feet west, NE cor. east 100 acres of tract, Isaac Holman Survey; No. 16 Kate Rogers, 150 feet south and 450 feet east, NW cor. of east 80 acres of south 160 acres, Section 2,407, T. E. & L. Survey. Petroleum Production Co.'s No. 2 L. J. Kunkel, 450 feet north and 150 feet west, SE cor. west 25 acres, south 50 acres, Block 2, Thomas McCoy Survey. Plains Production Co.'s No. 1 R. O. Prideaux, 1,850 feet south and 150 feet east, NW cor. John Dorsey Survey, being 150 feet north and east, SW cor. of their 42-acre lease. Prairie Oil & Gas Co.'s No. 7 J. T. Richardson, 150 feet south and east, NW cor. east 10 acres of west 60 acres, Section 15, South Anderson ranch subdivision. The Texas Company's No. 12 J. T. Richardson, 150 feet north and 900 feet east, SW cor. Section 16, South Anderson ranch subdivision. Texas Consolidated Oil Co.'s No. 1 John Hammering, 150 feet north and 450 feet west, SE cor. west 150.9 acres, Section 1, B. B. B. & C. Survey. Texhoma Oil & Refining Co.'s No. 3 L. J. Kunkel, 454 feet north and 150 feet west, SE cor. Block 2, Thomas McCoy Survey. Texhoma Oil & Refining Co. and Republic Production Co.'s No. 4 S. E. Oldham, 200 feet south and 150 feet east, NW cor. of 40-acre tract, in Elisa Hubble Survey. Trio Production Co.'s No. 1 V. J. Darilek, 150 feet south and east, NW cor. of east 80 acres of west 160 acres, Section 2,410, T. E. & L. Survey. United Production Co.'s No. 1 R. O. Prideaux "C", 2,150 feet south and 150 feet east, NW cor. John Dorsey Survey, being 150 feet south and east, NW cor. of their 48 acres.

Montague County

Humble Oil & Refining Co.'s No. 4 Robert Hinds, 773 feet south and 150 feet west, NE cor. of 40 acres, J. J. Wall Survey; No. 5, 150 feet south and east, NW cor. same 40 acres. Lesh, McCall & Kilcrease's No. 4 R. Hinds, 150 feet north and east, SW cor. of south 20 acres, east half, J. J. Wall Survey. Pure Oil Co.'s No. 6 J. W. Maddox, 200 feet south and 748 feet east, NW cor. of its 33 acres, S. H. Arnold Survey. The Texas Company's No. 8 I. A. Gist "A", 1,443 feet south and 150 feet west, NW cor. J. J. Wall Survey, and located in the William Donoho Survey. Texhoma Oil & Refining Co.'s No. 5 R. Hinds, 647 feet north and 150 feet east, SW cor. of 40 acres, J. J. Wall Survey; No. 6, 150 feet north and 547 feet west, SE cor. same 40 acres.

Wise County

Walker Valley Oil Co. and others' No. 1 R. B. White, 1,000 feet south and west, NE cor. R. B. White Survey.

Jack County

Ilseng Production Co.'s No. 1 John Allen, 450 feet south and 150 feet east, NW cor. John Allen 298.2 acres, in S. P. R. R. Survey No. 2. Richardson & Markley's No. 1 J. R. Sloan, 1,050 feet north and 1,925 feet west, SE cor. Section 2,769, T. E. & L. Survey.

Young County

R. I. Carter's No. 10 S. M. J. Benson, 658 feet south and 150 feet west, NE cor. of west 33 acres of N half, Section 1,450, T. E. & L. Survey. Howard Petroleum Co.'s No. 5 G. P. Stewart, 150 feet south and east, NW cor. Section 2, Young County school lands. Lowery and

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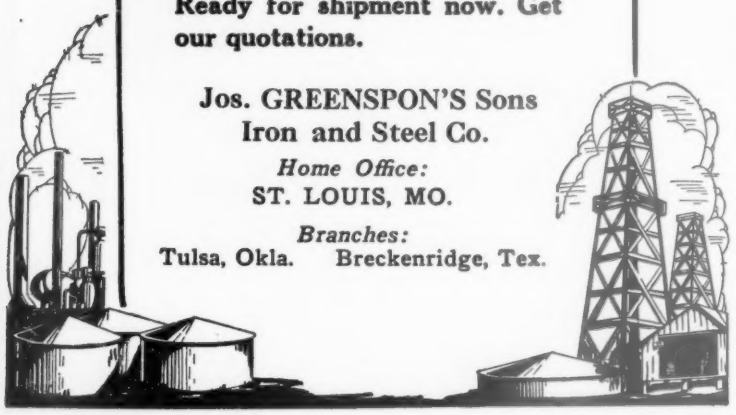

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others' No. 1 G. P. Stewart, 150 feet south and 4,350 feet west, NE cor. S. Tynes Survey, being 150 feet south and east of most northerly NW cor. of G. P. Stewart's 175 acres. McElreath, Suggett and Phillips Petroleum Co.'s No. 2 L. A. Snyder, 800 feet south and 1,470 feet east, NW cor. Robert Wilson Survey. Plains Petroleum Co.'s No. 1 L. A. Snyder, 1,470 feet south and 1,170 feet east, NW cor. Robert Wilson Survey. Ramming & Saunders' No. 1 G. P. Stewart, 817 feet north and 150 feet west, SE cor. Section 7, Young County school lands. Reed and others' No. 1 J. W. Jack, 150 feet south and east, NW cor. N half, Section 23, Young County school lands. Stafford & Hayes' No. 1 F. C. Dailey, 150 feet south and east of most northerly NW cor. of their 92 acres, S. Tynes Survey; No. 2 S. S. Wallace, 3,100 feet south and 8,500 feet west, NE cor. S. Tynes Survey, being 150 feet north and east, SW cor. of north 60 acres of the S. S. Wallace 70 acres. Tarkington and others' No. 1 Prideaux Brothers, 150 feet south and 175 feet west, NE cor. William Stoneham Survey. H. T. Wolf's No. 1 R. W. Blackman, 1,725 feet south and 750 feet west, NE cor. R. Wilson Survey; No. 1 J. P. Brown, 150 feet south and 650 feet west, NE cor. of south 40 acres of J. P. Brown 120 acres, William Stoneham Survey.

Throckmorton County

Humble Oil & Refining Co.'s No. 1 Joe Harris, 469 feet south and 350 feet east, NW cor. Section 975. T. E. & L. Survey.

Shackelford County

A. Buell, Jr. and others' No. 1 W. P. Newell, 660 feet north and west, SE cor. SE NW, Section 6, G. H. & H. Survey. A. G. Carter and others' No. 1 J. H. Nail, 660 feet north and west, SE cor. SE NW, Section 23, Block 10, E. T. R. R. Survey; No. 2, 660 feet north and west, SE cor. SW NE, Section 52, Block 10; No. 3, 660 feet north and west, SE cor. NW SE, Section 21, Block 10; No. 4, 660 feet north and west, SE cor. NE NE, Section 20, Block 10. Roeser & Pendleton's No. 1-B W. I. Cook 84, 150 feet north and east, SW cor. SE SE, Section 84, Block 10; No. 7-B W. I. Cook, 506 feet north and 150 feet east, SW cor. NE NE, Section 85, Block 10, E. T. R. R. Survey.

Stephens County

Mid-Tex Oil Co.'s No. 6 W. W. Cunningham, 850 feet south and 2,770 feet west, NE cor. south 150 acres, Section 1,210, T. E. & L. Survey; No. 1 S. H. Hill, Acct. 2, 150 feet south of Brazos River and 200 feet NE of SW line, J. C. Talley Survey, and located in S. H. Hill 7.5 acres. Atkinson & Sandefer's No. 1 W. F. Vicks, 418 feet south and 400 feet east, NW cor. south 80 acres of SE, Section 14, Block 6, T. & P. Survey. Chastain & Donley's No. 1 Mrs. Satterfield, 1,300 feet north and 450 feet east, SW cor. J. Durham Survey. Eidson and others' No. 3 H. S. Post, 660 feet south and 690 feet east, NW cor. SE, Section 62, Block 6, T. & P. Survey. Meyer & Kramer's No. 1 R. L. Glasscock, 690 feet north and west, SE cor. SE, Section 80, Block 4, T. & P. Survey.

Eastland County

J. E. Lewis and others' No. 1 P. G. Wright, 160 feet south and west, NE cor. Section 47, Leagues 3 and 4, McLennan County school lands.

Callahan County

Bradstreet and others' No. 1 J. T. Sawyer, 150 feet north and west, SE cor. W half, J. T. Sawyer 90 acres in G. M. Vigal Survey No. 798. Canyon Oil & Gas Co.'s No. 3 D. H. Derrington, midway between east and west lines and 150 feet north of south line of west 17.5 acres of its 37.5 acres, W. G. Anderson Survey. Nichols and others' No. 1 M. L. Long, center of south 17.5 acres of M. L. Long 37.5 acres of W. G. Anderson Survey. T. B. Slick's No. 1 B. B. Bond, 150 feet south and east, NW cor. of east 20 acres of B. B. Bond 37.5 acres, W. G. Anderson Survey.

Coleman County

Humble Oil & Refining Co.'s No. 1 W. W. and J. M. Weathered, 1000 feet north and 200 feet east, SW cor. of 224-acre tract, William McKnight Survey No. 737. Mitcham and others' No. 1 William Lobstein, 1,664 feet south and 150 feet west, NE cor. Conrad Motch Survey No. 43. Ross & Wright's No. 1 J. P. Morris, 3,341 feet east and 2,250 feet south, NW cor. William B. Twitty Survey No. 721. Westheimer & Daube's No. 1 F. W. Taylor, 330 feet north and west, SE cor. Section 74, Block 1, G. H. & H. Survey.

Brown County

Arkansas Fuel Co.'s No. 1 R. L. Eddington, 150 feet south of north line and 210 feet west of east cor. of south 80 acres of north 207 acres of R. L. Eddington 512-acre tract, Robert Mitchell Survey No. 141. Barkley & Conway's No. 11 T. L. Dunn, 150 feet north and 200 feet east, SW cor. north 31 acres, Section 12, Luan Delgado Survey No. 785. J. S. Cosden's No. 11 R. L. Westerman, 150 feet south and west, NE cor. west 50 acres of R. L. Westerman 172.5 acres, heirs of N. B. Mitchell Survey No. 150. Jake Hamon, Jr.'s No. 1 J. G. Gaines, 150 feet north and west, SE cor. S half, west 60 acres, J. G. Gaines 100 acres, William B. Travis Survey No. 148. J. K. Hughes Development Co.'s No. 9 J. T. Arledge, 150 feet south and 1,350 feet east, NW cor. J. T. Arledge tract, heirs of N. B. Mitchell Survey No. 150; No. 10, 150 feet north and 1,980 feet east, SW cor.; No. 11, 150 feet south and 1,650 feet east, NW cor. McLester's No. 7 T. J. Clark, 400 feet north and 850 feet east, SW cor. of east 100 acres, T. J. Clark 160 acres in J. P. Triplett Survey. Pandem Oil Corp.'s No. 2 R. L. Westerman, 150 feet south and 450 feet east, NW cor. west 62.5 acres of east 122.5 acres of R. L. Westerman 172.5 acres, heirs of N. B. Mitchell Survey No. 150. Phillips Petroleum Co.'s No. 3 T. L. Dunn, 150 feet south and 804 feet west, NE cor. of south 80 acres, Section 12, J. Delgado Survey No. 785; No. 2 J. H. Prather, 150 feet north and west, SE cor. J. H. Prather 320 acres in William L. Swain Survey No. 145. West & H-Y Oil Co.'s No. 5 J. W. Newton, 175 feet south and 160 feet east, NW cor. J. W. Newton 361 acres in Robert Mitchell Survey No. 141. C. Andrade and others' No. 1 A. J. Conklin, midway between north and south lines and 225 feet east of west line of their 9-acre tract, W. S. Armstrong Survey No. 41. Campbell & Rosenfield's No. 1 W. H. Price, 150 feet south and east, NW cor. SE, Section 44, T. & N. O. Survey. Fain and others' No. 1 C. E. Taylor, 1,320 feet south and 1,000 feet west, NE cor. C. E. Taylor 177 acres in T. M. Whittington Survey. Haynes and others' No. 1 T. E. Denman, center of T. E. Denman 160 acres, M. E. P. R. R. Survey.

Crane County

Magnolia Petroleum Co.'s No. 1 O'Keefe (University), 330 feet south and east, NW cor. Section 38, Block 30, University lands.

Schleicher County

Cope & Dalton's No. 1 Sol Meyer, C SW, Section 99, Block 5, E. L. & R. R. Survey.

POMERENE SEES PRESIDENT

WASHINGTON, D. C., May 29.—Former Senator Pomerene, one of the government's counsel in the oil litigations, called at the White House to advise President Coolidge, he said of the status of the various cases, civil and legal. Mr. Pomerene said he was in Washington appearing before the House Appropriation Committee seeking an additional appropriation of $100,000 to continue the prosecutions, and also a continuance of $40,000 unexpended which would automatically revert to the treasury unless Congress orders otherwise.

ALBERTA OIL REGULATIONS

CHATHAM, Ont., May 29.—Alex Ross, Minister of Public Works for Alberta, announces that new regulations governing drilling for oil and gas on all except crown lands in the province of Alberta are being prepared. They will follow the general lines of the Dominion regulations, but will be more fully applicable to conditions in Alberta. The main purpose, it is stated, will be to give the individual operator better protection.

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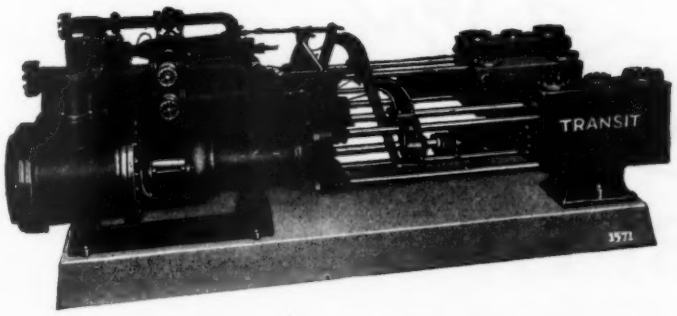

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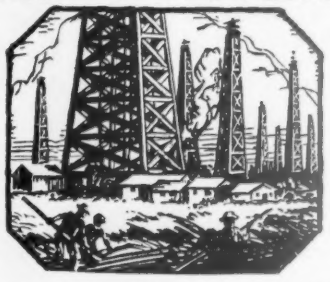

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BIG WELLS IN GULF COAST POOLS; SALT DOME AREA HOME OF GUSHERS

By P. L. McGreal

HOUSTON, Tex., May 31.—One of the allurements in the Gulf Coast plains belt is the possibility of big wells. The Saline dome region has been the home of gushers, just as has been the case in Mexico. Both are difficult regions in which to operate, being costly and extra hazardous, but the hope of big wells keeps operators at work around these saline domes. The big wells pay out quickly, provided they do not go to salt water. Many of them continue to flow for years, which again lessens the cost of operations.

The past few years has not seen many lasting large flowing wells in the Coastal area. West Columbia was the last of the more prolific gusher wells. The new districts, like South Liberty, Boling and Lockport, furnished a few big wells, but they did not last and were soon on a pumping jack or flowing with the aid of air compressors. The new deep sand producers on the southeast side of the Spindletop Pool and on the north have failed to duplicate the early wells there and the same is true of the few deep sanders on the southwest flank at Sour Lake.

The records show that none of the thousands of wells completed in the Coastal region since 1901 can be credited with as great an initial output as the original wells at Spindletop. The famous Lucas gusher, which opened the pool and started development work in the Gulf Coast belt, is credited with 50,000 bbls. initial flow. Heywood Brothers' No. 2 there was rated as a 90,000-bbl. well, but the output was probably overestimated at the time. Guffey & Galey on the Gladys City tract had several wells with from 8,000 to 15,000 bbls. initial flow.

The Jennings Pool (La.), between 1902 and 1908, had more than 35 wells with initial output of from 5,000 to 15,000 bbls. The Wilkins Oil Co.'s No. 2 started off as a 7,000-bbl. well and produced over 2,500,000 bbls. before it quit flowing. The Heywood Oil Co.'s No. 4 put out over 1,000,000 bbls. before it quit. The Producers Oil Co.'s No. 4 Clement came in making 5,000 bbls. and at the end of two weeks it was flowing 15,000 bbls. per day.

Some big wells were brought in during the early days of the Batson Pool. The Paraffine Oil Co.'s No. 3, in 1903, was rated as a 15,000-bbl. gusher, and the Guffey Petroleum Co.'s No. 1 Riley, in 1904, came in flowing 18,000 bbls. In the same year, The Texas Company's No. 1 Moonshine, was credited with 28,000 bbls. initial flow.

In contrast with the long-lived flowing wells mentioned is the Guffey Petroleum Co.'s No. 5 BBBC tract, in 1906, in the Saratoga Pool, which came in flowing 8,000 bbls. and was on the beam pumping in two days.

The first big well at Damon Mound was the Texas Exploration Co.'s No. 3 Bryan with an initial flow of 10,000 bbls.

The first gusher in the Humble Pool was the late D. R. Beatty's No. 1, in 1905, credited with 8,000 bbls. In the same year, E. F. Simms' No. 2 Cherry was brought in flowing 17,000 bbls. initial. The Moonshine Oil Co.'s No. 24 Cherry, in 1905, was credited with 14,000 bbls. A large number of the wells in that pool ranged from 5,000 to 10,000 bbls. The deep sand section on the east side was opened in 1914 by the Producers Oil Co. and Farmers Petroleum Co. The former has since been merged with The Texas Company. The Farmers Petroleum Co. was organized by J. S. Cullinan after he had retired as president of The Texas Company. These companies started operating on the Stevenson 535 acres, drilling on alternate 25-acre tracts. The Galena-Signal Oil Co. has since acquired the holdings of the Farmers Petroleum Co. The Stevenson proved to be one of the most prolific pieces of acreage in the history of the Gulf Coast. The sand was found at 3,150-3,250 feet. Wells flowing 5,000, 6,000, 8,000 and 10,000 bbls. were common. The largest was the Farmers Petroleum Co.'s No. 16 Stevenson, in 1915, which came in flowing 24,000 bbls. The Producers Oil Co.'s No. 18 was rated at 17,000 bbls. The Landslide, Carroll, Hermann and Koehler leases also furnished large wells back in 1917, 1918 and 1919.

The Vinton (La.) Pool is another example of wells of the gusher type in the early days. In 1913, the Gulf Refining Co.'s No. 4 Star-Vincent made 13,000 bbls. and its No. 10 Vincent flowed the same. The Producers Oil Co.'s No. 1 Gray flowed 10,000 bbls. In 1913, the Gum Cove Oil Co.'s No. 4 Lucky Four acre came in at 2,600 feet flowing 7,000 bbls.

The Markham Pool in Matagorda County, demonstrates the flashes that from time to time break across the Coastal horizon. It might be said that the first wells were the only real wells in that pool. Back in 1910, the Producers Oil Co. brought in No. 1 Clem making 7,000 bbls. The Clem Oil Co.'s No. 1 Myers flowed 15,000 bbls. for one day and then sanded. The Hardy Oil Co.'s No. 24 Smith flowed wild at the rate of 4,000 bbls. for 20 days. It finally sanded and was lost.

Record Well

Only ordinary capacity wells were the rule in the Goose Creek Pool until deeper sand drilling was inaugurated in 1916. Wells rated initially at from 4,000 to 12,000 bbls. were completed during 1917. The E. F. Simms Oil Co., in which H. F. Sinclair was interested, brought in No. 11 Sweet in 1917. It was a wild well estimated at 35,000 bbls. The hole finally bridged and the well was worked over.

The West Columbia Pool was opened in June, 1918, and from the very beginning it was noted for its large wells. The original sands were about 3,035-3,100 feet. The Japhet lease of the Humble Oil & Refining Co., was the best in the pool. There, wells flowing 8,000 and 10,000 bbls. were the usual thing.

The record well in the history of the Coastal pools to date is The Texas Company's No. 1 Abrams at West Columbia. It came in July 20, 1920, with initial flow of 28,000 bbls., practically drilling itself in while the crew was off the derrick floor. The sand was around 2,785 feet. The well flowed with the bit and drill stem in the hole and gradually increased to 31,000 bbls. per day. It extended the pool about a mile to the northwest. The well continued to flow an average of more than 10,000 bbls. per day for 2½ years. During a great part of that time crude was posted at $3 per barrel in the Coastal region, so a person can gain some idea of the value of the well. The flow gradually lessened, but the well headed until about 18 months ago when it was put on the beam. It is still producing.

The Texas Company still holds the Abrams 600 acres, much of it being undeveloped.

Getting away from the Coastal region of Texas-Louisiana, some large wells were developed in the north central Texas fields in the early days. In 1918, in Eastland County, the Prairie Oil & Gas Co.'s No. 1 Emma Terrell, stands in the records as a 9,000-bbl. well. Same company's No. 5 Copeland is credited with 6,000 bbls. and the Magnolia Petroleum Co.'s No. 1 Connellee is credited with 5,000 bbls. initial flow. The Sun Oil Co.'s No. 3 Butler was said to have a 5,500-bbl. producer.

In Stephens County, back in 1919, the Mid-Kansas Oil & Gas Co.'s No. 2 Knott was a 6,000-bbl. flowing well. Root, Huff and Duff's No. 1 Perkins flowed 7,000 bbls. initial.

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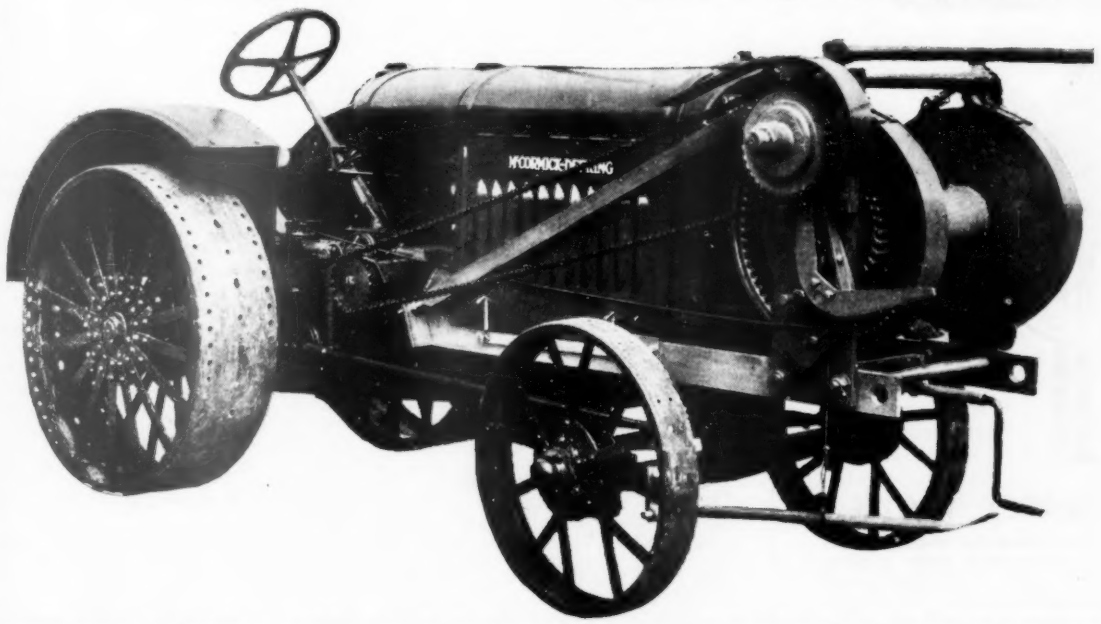

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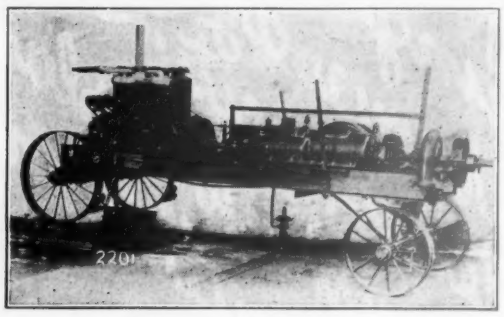

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ATLANTIC SEABOARD DOMINATES IN CONSUMPTION OF PETROLEUM

By N. O. Fanning
New York Bureau, The Oil and Gas Journal, Room 543, 30 Church St., New York

NEW YORK, May 31.—The Atlantic Seaboard occupies a position in petroleum consumption similar to that enjoyed by the Southwest in crude oil production. For the extent of territory involved it has the largest consumption of practically all refined products. It dominates in all of the activities in which the use of petroleum enters, such as the use of motor vehicles, manufacturing and all other kinds of trade, including exporting. Its ports not only export large quantities of petroleum but offer bunkering facilities for a large portion of the world's oil-burning vessels.

Supplying the huge demand for petroleum in the Atlantic Seaboard territory has always been one of the major problems of the oil industry, especially since the source of supply has been gradually moving away from it. At first this demand was supplied from fields in western Pennsylvania. Then the source moved west until it reached the Mid-Continent and Gulf Coast. Next the fields of Mexico were opened up as a major source, while the latest move has been out to the Pacific Coast.

The need for carrying crude oil large distances to Atlantic Coast refineries has resulted in the development of oil tanker transportation on a widespread scale, and this has largely superseded other means, namely, pipeline and rail transportation. So much cheaper is water transportation that petroleum can be carried from two to three times as far by tanker as by pipeline or tank car for the same amount.

Before the World War the demand for oil products on the Atlantic Coast was met largely through the piping of crude to coastal refineries, from which the products were sent to various local distributing points in tank cars.

Since the war the development of oil fields near the seaboard at great distances from the Atlantic Coast resulted in the growth of tanker transportation, so that at present the bulk of the consumption here is met by tanker transportation both of crude to refineries and of refined products to coastal distributing points. From the port refineries and distributing points the oil products are carried by barge or tank car to lesser distributing stations. Barge transportation is being developed wherever possible to replace tank car transportation. Everywhere the advantage of water transportation is being recognized because of its greater economy.

Five years ago the transportation of crude oil to Atlantic Seaboard refineries by water had reached large proportions, but comparatively little refined oil was carried in this manner. Now, however, the amount of refined oil, including fuel oil, some of which is run through refineries, has increased so as to almost equal the quantity of crude.

Receipts Over Half Million

Figures compiled exclusively by The Oil and Gas Journal indicate that an average of 544,000 bbls. of crude and refined oil a day were transported to Atlantic Coast ports during the first 18 weeks of 1926. Of this total, it is estimated 282,000 bbls. a day consisted of crude petroleum, 178,000 bbls. of fuel and gas oil and the remainder, 104,000 bbls. daily, other refined products—largely gasoline. These estimates are based on port figures together with other statistics available, indicating the trend of water shipments of the various products. A generalization can only be made because the amounts of the various products shipped depend partly on seasonal demand, and on several other considerations.

The amount of fuel oil brought to the Atlantic Seaboard has increased largely during the past year, especially that from California. This is due in part to the increased demand here for Diesel oil, and more largely because of the more prevalent custom of cracking fuel oil. To a great extent, therefore, the fuel oil takes the place of crude as a basis for refining.

The refineries on the Atlantic Seaboard have an aggregate capacity of 472,000 bbls. a day. Every plant has cracking facilities. The receipts of oil my water vary in close proximity with the refining capacity at the several ports, especially in the three principal ports—New York, Philadelphia and Baltimore. Of course this is not due entirely to the direct relationship of receipts to refinery capacity, but also in part to consumption. It also of importance to note that many refineries receive crude or fuel oil by pipeline and tank car.

Division of daily average receipts of oil at Atlantic ports by tank steamer for the first 18 weeks of 1926, as between crude and refined, and by sources, follows (barrels):

	Gulf	Pacific	Imports	Total
Crude	128,000	43,000	91,000	262,000
Fuel and gas oil	107,000	31,000	40,000	178,000
Refined	86,000	12,000	6,000	104,000
Total	321,000	86,000	137,000	544,000

Table showing daily average receipts at the principal ports, together with total refining capacity, for the same period, follows (barrels):

	Receipts				
	Gulf	Pacific	Imports	Total	Refining
New York	147,000	38,000	60,000	245,000	252,000
Philadelphia	81,000	14,000	11,000	106,000	89,000
Baltimore	20,000	13,000	15,000	48,000	49,000
Boston	16,000	8,000	16,000	40,000	23,500
Fall River	1,000	9,000	2,000	12,000	30,000
Providence	17,000	3,000	11,000	31,000	12,500
Charleston	9,000	.....	7,000	16,000	10,000
Miscellaneous	30,000	1,000	15,000	46,000	6,500
Total	321,000	86,000	137,000	544,000	471,000

Several features of the foregoing table are worthy of special mention:

Receipts at New York, Baltimore and Fall River were below the refining capacity at these ports (New York includes Bayonne, of course).

Receipts at Philadelphia, Boston, Providence, Charleston and "miscellaneous" ports exceeded refinery capacity at these ports. The excess of receipts at each port follows:

Philadelphia	17,000
Boston	17,000
Providence	18,500
Charleston	6,000
"Miscellaneous"	39,500

The total receipts on the Atlantic Coast exceeded total refining capacity by 73,000 bbls.

"Miscellaneous" ports are principally those in the South, including Brunswick, Ga., Savannah, Ga., Jacksonville, Fla., and Miami, Fla.

Gulf Principal Source

The Gulf Coast has always supplied the largest proportion of oil shipped by water to the Atlantic ports, Gulf ports clearing petroleum from both Gulf Coast and Mid-Continent fields. During the first 18 weeks of this year the daily average receipts from Gulf Coast ports amounted to 321,000 bbls., as against 86,000 bbls. from the Pacific Coast, and imports of 137,000 bbls., largely from Mexico.

The relative importance of the Atlantic ports, from the viewpoint of oil received, has remained fairly constant during the past few years. New York still leads by a big margin. Its receipts by water for the first 18 weeks of this year averaged 245,000 bbls. a day, while those of Philadelphia averaged 106,000 bbls. a day. Baltimore, as usual, takes third place, with 48,000 bbls. a day.

Of these three leading ports, New York and Baltimore show steady gains, comparing the period of 1926 with the same period of 1925 and 1924. Philadel-

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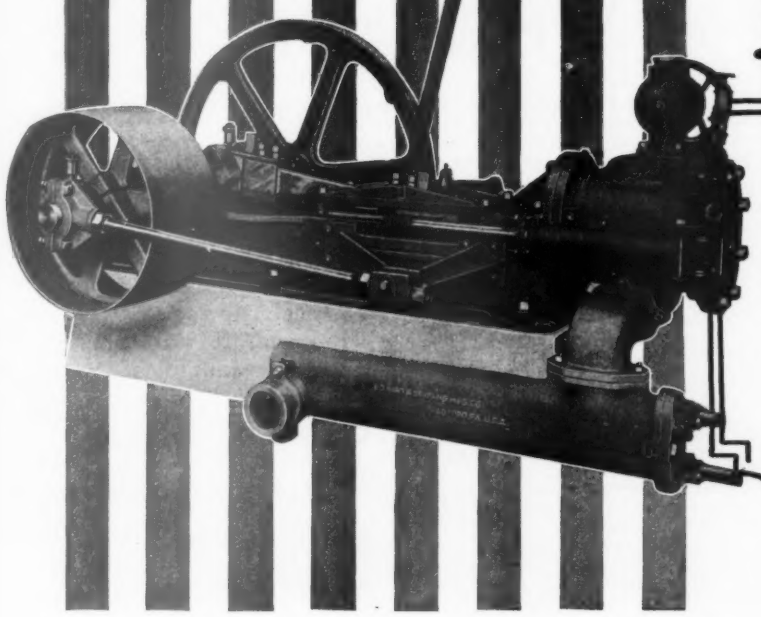

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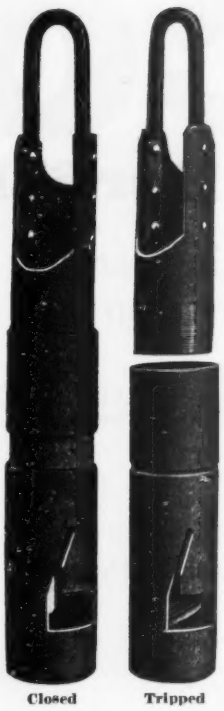

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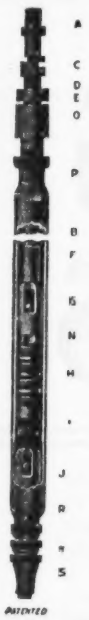

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phia appears to falter a little, its receipts for this year being below either 1925 or 1924, by a small margin, however.

Fall River and Providence have not shown any significant change in the last few years.

Boston as Oil Port

Boston, of all the ports on the Atlantic Seaboard, shows the most significant changes in receipts during the last three years. To all appearances Boston is becoming of greater importance each year, and during the first 18 weeks of this year rivaled Baltimore, the third largest oil port. Its receipts of 40,000 bbls. daily, against 48,000 bbls. for Baltimore, show a gain of 54 per cent, compared with either of the two preceding years. In the same period of 1925, Boston receipts averaged 26,000 bbls. daily, and for 1924 was identically the same.

The gain in receipts at Boston cannot be explained by a large gain in refining capacity, but more by direct bulk shipments of refined products to Boston from the Gulf Coast, Pacific Coast and Mexico.

If receipts at Boston continue to forge ahead of refining capacity, the belief is that the latter also will be increased. It would not be surprising if the Standard Oil Co. of New York were to establish a plant there within the next few years.

Boston has been found a strategic point from which to ship products, especially gasoline, inland, as far as Albany. Due to the cheapness of water transportation, and good roads in New England, many interior points can be reached more economically than from Fall River, Providence or New York. In addition, Boston provides exceptional port and railroad facilities.

The following table shows daily average receipts at the principal ports (giving source for the three largest), during the first 18 weeks of 1926, 1925 and 1924 (in barrels):

	1926	1925	1924
New York:			
Gulf Coast	147,000	130,000	69,000
Pacific Coast	38,000	42,000	104,000
Imports	60,000	65,000	36,000
Total	245,000	237,000	209,000
Philadelphia:			
Gulf Coast	81,000	87,000	71,000
Pacific Coast	14,000	16,000	25,000
Imports	11,000	9,000	15,000
Total	106,000	112,000	111,000
Baltimore:			
Gulf Coast	20,000	22,000	5,000
Pacific Coast	13,000	7,000	14,000
Imports	15,000	16,000	20,000
Total	48,000	45,000	39,000
Boston:			
Total	40,000	26,000	26,000
Fall River:			
Total	12,000	18,000	7,000
Providence:			
Total	31,000	30,000	35,000

As the above table shows, there is a marked decrease in receipts from the Pacific Coast this year at New York and Philadelphia compared with 1924. Receipts from the Gulf at the same ports show a corresponding gain.

Recent Patents

1,582,923. Art of Removing Wax From Oil. Harry F. Glair and Oscar E. Bransky, Whiting, Ind., assignors to Standard Oil Co., Whiting, Ind., and Chicago, Ill., a Corporation of Indiana. Filed July 7, 1922. Serial No. 573,473. 4 Claims. (Cl. 196—18.)

1. The method of separating wax from lighter wax-bearing, substantially uncracked oil distillates which consists in admixing therewith a hydrocarbon oil of lower viscosity and heavier than burning oil, chilling and filtering the mixture.

1,583,340. Fractionation of Hydrocarbon Oils and Like Liquids. Robert Henry Crozier, London, England. Filed July 7, 1925. Serial No. 41,976. 9 Claims. (Cl. 196—138.)

1. Apparatus for the fractionation of hydrocarbon oils and like liquids including columns through which the vapors to be treated may pass serially upwards, pipes containing heating medium and traversing said columns, columns alternating with said first mentioned columns through which the vapors may pass serially downwards, pipes containing cooling medium and traversing said second mentioned col-

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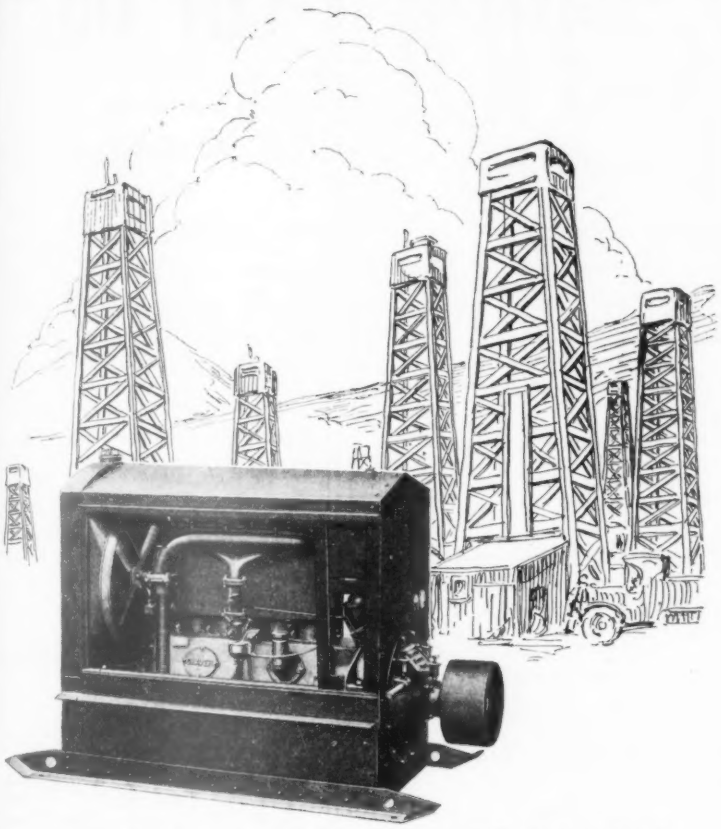

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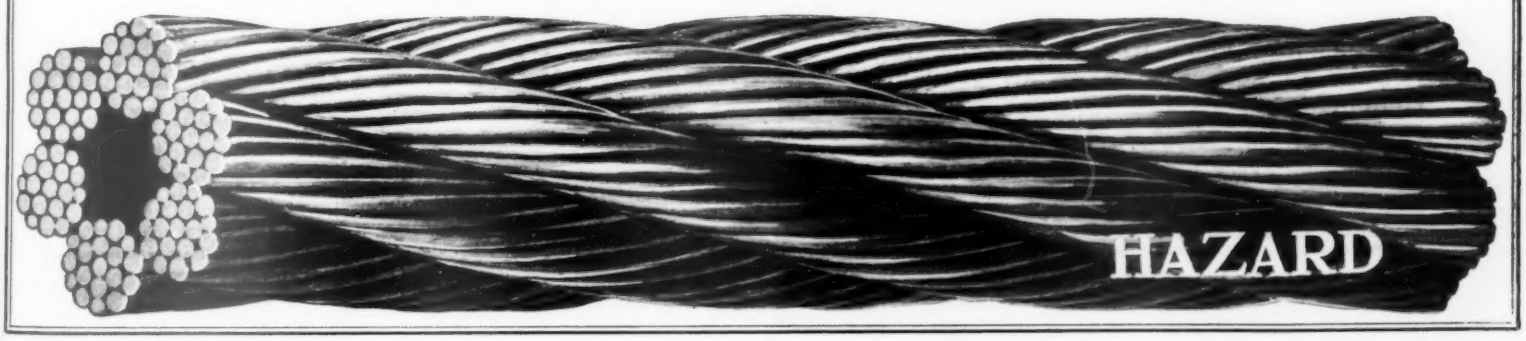

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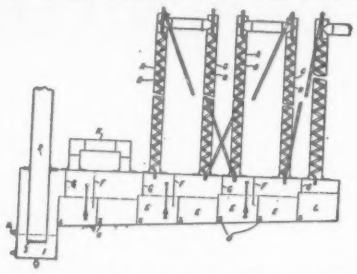
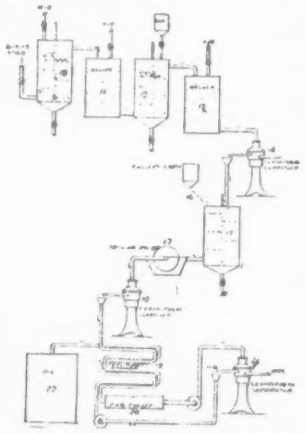
umns, a connection between each column of the first series and a column of the



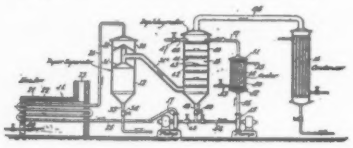
second series, means connecting the pipes containing cooling medium serially and means connecting the pipes containing heating medium serially and condensate collecting boxes disposed beneath and open to the lower ends of at least some of said columns.

1,577,852. Process of Separating Wax From Lubricating Oil. Earl Petty, Winfield, Kans., assignor to The De Laval Separator Co., New York, N. Y., a Corporation of New Jersey. Filed Aug. 24, 1921. Serial No. 495,078. 5 Claims. (Cl. 196—19.)



4. The process of separating wax from mineral oil lubricating stock which comprises diluting the stock with a light petroleum distillate, then agitating the diluted stock with an acid, separating out acid sluge and agitating the acid treated stock with an alkali, then removing the soap and water from the stock, then mixing a clarifying and decolorizing agent with the stock and removing said agent with coloring matter, then chilling the stock, and then centrifuging the stock to separate the wax, with a proportion of the diluting agent, from the remainder of the diluting agent and the oil.

1,583,746. Apparatus for Refining Oils. Daniel Pyzel, Piedmont, Calif, assignor to Simplex Refining Co., San Francisco, Calif., a Corporation of California. Filed October 26, 1921. Serial No. 510,561. 1 Claim. (Cl. 196—99.)



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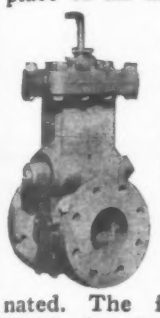

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Mexican Shipments In April Declined 1,482,713 Barrels

By George Blardone
Mexican Bureau, The Oil and Gas Journal

TAMPICO, Mex., May 28.—Shipments of petroleum from Mexican ports of primary clearance during the month of April totaled 7,337,986 bbls., a decrease from the month preceding of 1,482,713 bbls.; and from April, 1925, of 2,100,799 bbls. The biggest loss during April compared with last March was by Transcontinental Petroleum Co., its shipments decreasing about 1,000,000 bbls. last month. The remaining losses, compared with March, were sustained in general by the other shipping companies. A noteworthy departure from the exporting column was East Coast Oil Co., which is absent, the first time since 1913.

The following tables, self-explanatory, detail the April movement:

FROM TAMPICO
By Huasteca Petroleum Co.

Apr.	Rig	Vessel, destination—	Bbls.
1	Ss.	Cerro Azul, New York	*78,889
1	Ss.	C. E. Harwood, Norfolk & Miami	†33,953
2	Ss.	S. M. Spalding, Boston	*66,084
4	Ss.	Invergarry, Lizard f/o	*56,156
4	Ss.	E. L. Doheny, Philadelphia	*60,084
4	Ss.	F. H. Wickett, Providence	*77,590
5	Ss.	Elisha Walker, New York	*68,638
5	Ss.	Mendocino, Boston	*63,677
6	Ss.	J. O. Boyd, Jacksonville	†19,558
6	Ss.	Mantilla, Houston	*56,044
7	Ss.	I. C. White, Baltimore	67,911
7	Ss.	R. W. Stewart, New York	*75,935
7	Ss.	H. G. Wylie, Tampa	*41,267
8	Ss.	Harold Walker, Portland	*67,413
8	Ss.	Dean Emery, New Orleans	70,610
8	Ss.	G. W. Barnes, Baltimore & Norfolk	†75,764
9	Ss.	Montana, Boston	*63,108
10	Ss.	Wm. Green, New York	*67,878
11	Ss.	O. D. Bennett, Boston	*50,371
12	Ss.	Norman Bridge, Tampa	*40,827
14	Ss.	Meline, Houston	*65,270
14	Ss.	Mantilla, Jacksonville	*52,844
16	Ss.	Ballhill, Norfolk	*60,424
18	Ss.	P. H. Harwood, Providence	*66,868
18	Ss.	Cerro Azul, New York	*78,473
19	Ss.	H. G. Wylie, Port Tarafa, Cuba	*40,558
19	Ss.	W. H. Doheny, Panama	*67,293
20	Ss.	Invergoil, Lizard f/o	*57,475
20	Ss.	P. H. Harwood, Tampa & Miami	†34,477
22	Ss.	Crampton Anderson, Boston, Providence, New York	†76,446
22	Ss.	G. G. Henry, Boston	*66,295
22	Ss.	E. L. Doheny, Puerto Cortez, C. A.	*61,489
23	Ss.	Satanta, Boston	*41,559
23	Ss.	C. A. Canfield, Houston	*65,838
23	Ss.	Meline, Philadelphia	62,414
24	Ss.	Dist. Columbia, New York	*67,935
24	Ss.	Norman Bridge, Fall River	*41,246
26	Ss.	F. R. Kellogg, Philadelphia	*65,745
26	Ss.	Elisha Walker, New York	*69,367
26	Ss.	S. M. Spalding, Providence	*66,026
27	Ss.	Mirlo, Providence	*64,819
27	Ss.	Mirita, Cienfuegos, etc.	54,448
28	Ss.	Mendocino, Baltimore	62,822
29	Ss.	Harold Walker, Portland	*67,516
30	Ss.	I. C. White, Boston	*68,804
		Coastwise deliveries	*93,524
		Coastwise deliveries	†23,040
		Bunker deliveries	43,648
		Total	2,886,420

By Transcontinental Petroleum Co.

Apr.	Rig	Vessel, destination—	Bbls.
1	Ss.	Mary Luckenbach, Key West	*47,459
6	Ss.	Dillwyn, New York	68,633
7	Ss.	Bidwell, New York	67,813
7	Ss.	Pioneer, Key West	*48,627
8	Ss.	Princeton, Cuban Ports	47,017
8	Ss.	Glenpool, Cuban Ports	53,076
9	Ss.	Hugoton, New York	69,202
9	Ss.	Malacca, New York	45,141
9	Ss.	Malacca, New York	†32,131
14	Ss.	Agwilake, New York	80,257
15	Ss.	Varanger, New York	82,851
16	Ss.	Clement Smith, New York	68,311
16	Ss.	Agwihavre, Charleston	80,629
18	Ss.	Pioneer, Port Tampa	*48,120
19	Ss.	Mary Luckenbach, Cuban Ports	49,727
19	Ss.	Matinicock, New York	76,711
20	Ss.	Agwimex, New York	39,899
20	Ss.	Priscilla, Key West	*52,712
24	Ss.	Princeton, Cuban Ports	26,197
24	Ss.	Princeton, Cuban Ports	*22,745
26	Ss.	Nelson, New York	37,998
27	Ss.	Bidwell, New York	67,373
28	Ss.	Priscilla, Key West	*51,080
29	Ss.	F-Sulphur 6, La Romana, D. R.	*17,799
		Bunker deliveries	61,851
		Total	1,343,359

By Mexican Eagle Oil Co., Ltd.

Apr.	Rig	Vessel, destination—	Bbls.
3	Ss.	San Rosendo, Nassau f/o	†40,050
5	Ss.	San Leopolo, Nassau f/o	*26,391
5	Ss.	San Leopoldo, Nassau f/o	†26,256
6	Ss.	San Silvestre, Rio Janeiro	*38,863
6	Ss.	San Silvestre, Rio Janeiro	†21,371
6	Ss.	San Lamberto, Nassau f/o	*56,246
8	Ss.	San Gerardo, Nassau f/o	*52,983
8	Ss.	L. J. Drake, Jacksonville	*55,113
10	Ss.	San Zotico, Key West	*53,717
12	Ss.	San Dunstano, B. Aires & Rosario	†59,334
13	Ss.	Halsey, Porto Rico	*68,101
20	Ss.	San Leon, Key West	*58,239
21	Ss.	Essex Isles, South America	†28,574
		Coastwise deliveries	*108,018

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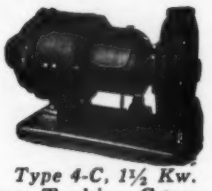

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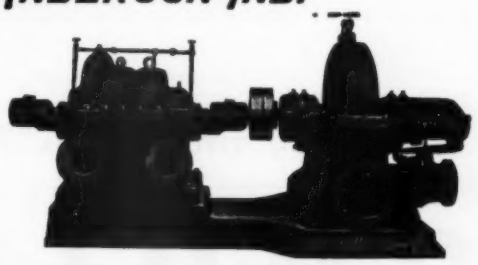

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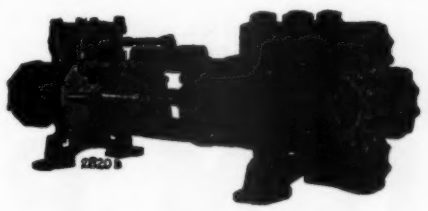

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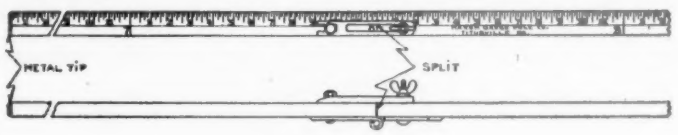

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		Coastwise deliveries	†27,183
		Bunker deliveries	51,800
		Total	801,239

By Mexican Sinclair Petroleum Corp.

Apr.	Rig	Vessel, destination—	Bbls.
1	Ss.	Madrono, Nuevitas	55,806
5	Ss.	Sabine Sun, Matanzas	70,517
10	Ss.	Mirita, Cieufuegos etc. ...	57,104
12	Ss.	Gene Crawley, New Orleans	29,616
12	Ss.	Harry Farnum, Puerto Barrios, C. A.	31,335
16	Ss.	E. V. R. Thayer, Cienfuegos	70,554
16	Ss.	Madrono, Nuevitas	55,823
16	Ss.	W. L. Connolly, Port Limon, C. A.	28,862
16	Ss.	Sabine Sun, Havana	73,503
27	Ss.	Harry Farnum, Bocas del Toro, C. A.	32,467
28	Ss.	E. V. R. Thayer, Havana..	69,458
		Bunker deliveries	15,071
		Total	590,116

By Cia. Mexicana-Holandesa La Corona, S.A.
(Royal Dutch-Shell)

Apr.	Rig	Vessel, destination—	Bbls.
2	Ss.	Agwisun, New York	74,387
4	Ss.	Belridge, Nassau f/o	60,593
7	Ss.	Scott. Standard, Nassau f/o	57,714
9	Ss.	Caloric, Nassau f/o	56,979
9	Ss.	Hoven, Boston	68,408
20	Ss.	Agwimex, New York	39,444
22	Ss.	Agwisun, New York	73,214
28	Ss.	Golaa, Nassau f/o	51,286
		Coastwise deliveries	12,019
		Bunker deliveries	53,924
		Total	547,968

By La Espuela Oil Co.

Apr.	Rig	Vessel, destination—	Bbls.
1	Ss.	F-Sulphur 6, Freeport	35,736
2	Ss.	F-Sulphur 1, Freeport	14,002
8	Ss.	F-Sulphur 6, Freeport	40,384
9	Ss.	F-Sulphur 1, Freeport	15,100
12	Ss.	Nelson, Freeport	39,418
14	Ss.	F-Sulphur 1, Freeport	14,407
15	Ss.	F-Sulphur 6, Freeport	39,283
18	Ss.	Nelson, Freeport	39,269
22	Ss.	F-Sulphur 6, Freeport	39,608
		Total	277,207

By The Texas Co.

Apr.	Rig	Vessel, destination—	Bbls.
2	Ss.	Louisiana, Cienfuegos	25,935
3	Ss.	Pennsylvania, Norfolk	58,450
17	Ss.	Texas, Port Neches	54,593
25	Ss.	Georgia, Providence	*47,733
27	Ss.	Texas, Port Neches	*56,869
		Bunker deliveries	6,471
		Total	250,051

By Pierce Oil Corp.

Apr.	Rig	Vessel, destination—	Bbls.
4	Ss.	Inverglass, Manchester ...	*60,315
23	Ss.	L. J. Drake, Jacksonville..	*56,266
27	Ss.	Wm. Isom, Baltimore	*28,197
		Bunker deliveries	22,772
		Total	167,550

By Mexican Gulf Oil Co.

Apr.	Rig	Vessel, destination—	Bbls.
8	Ss.	Agwimars, Baltimore	64,972
9	Ss.	Caloria, Puerta Padre, Cuba	40,880
20	Ss.	Topila, Philadelphia	48,761
		Bunker deliveries	6,817
		Total	161,430

By Empire Gas & Fuel Co.

Apr.	Rig	Vessel, destination—	Bbls.
1	Ss.	Cassimir, Philadelphia	43,585
23	Ss.	Caloria, Puerto Padre, Cuba	41,030
24	Ss.	Swiftscout, Fall River	76,114
		Total	160,729

By Mexican Atlas Petroleum Co.

Apr.	Rig	Vessel, destination—	Bbls.
20	Ss.	Cassimir, New York	44,887
28	Ss.	F-Sulphur 6, New Orleans.	39,705
		Bunker deliveries	7,060
		Total	91,652

By Mexican Oil Products Corp.

Apr.	Rig	Vessel, destination—	Bbls.
30	Ss.	Madrono, New Orleans ...	30,286
		Bunker deliveries	7,792
		Total	38,078

FROM TUXPAM

By Mexican Eagle Oil Co., Ltd.

Apr.	Rig	Vessel, destination—	Bbls.
10	Ss.	San Gerardo, Nassau f/o....	22,187

APRIL SUMMARY

From—	
Tampico	7,315,799
Tuxpam	22,187
Total April, 1926	7,337,986
Total April, 1925	9,438,785
Decrease April, 1926	2,100,799

DIVISION OF MOVEMENT

To—	
United States	4,954,676
Cuba and West Indies	1,298,786
Mexican Coastwise	263,784
United Kingdom	173,946
Central America	154,153
South America	148,142
Panama	67,293
Bunkers (to balance)	277,206
Total	7,337,986

CLASSES

Crudes	3,251,403
Topped crudes	3,311,240
Distillates	498,137
Bunkers (to balance)	277,206
Total	7,337,986

*Indicates topped crude.
†Indicates distillates.

AUTO ACCIDENT FATAL

SHREVEPORT, La., May 29.—Howard J. Clinton, 35, pipeline foreman for the Humble Oil & Refining Co. in the Smackover area, was instantly killed and his companion, Fred Seely, superintendent for the same company in the Cotton Valley and Irma districts, was injured when an automobile in which they were riding turned over near Prescott, Ark.

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A. I. M. M. E. ISSUES VALUABLE PUBLICATION

"Petroleum Development and Technology in 1925," a book of 784 pages, has been published by the American Institute of Mining and Metallurgical Engineers, No. 29 West 39th Street, New York. It contains the papers presented at symposiums of the petroleum division of the Institute at the New York meeting, February 15 to 17, 1926; the Los Angeles, Calif., joint session, January 21, 1926, and the Casper, Wyo., meeting, August 28 to 30, 1925.

The price of the book to members of the Institute is $2.50 and to non-members $5.

This volume contains fundamental and scientific data relating to the petroleum industry. It is divided into six parts.

Part 1—Introduction and outline, with an excellent article of 14 pages, "Technologic Progress in the Oil Industry," by F. Julius Fohs.

Part 2—Production Engineering. This part contains articles by our best authorities on the subject. It requires 279 pages.

Part 3—Refining Technology. The excellent character of these pages caused very favorable comment when they were first reported. There are 140 pages in this part.

Part 4—Transportation Engineering. Here 52 pages are devoted to transportation problems, including evaporation, storage, breakage and corrosion.

Part 5—Production. This part, of 254 pages, includes discussions of the production conditions existing in all oil fields of the world.

Part 6—Petroleum Economics. This final section, of 66 pages, includes papers relating to research and economics.

The book contains such a wealth of information by well known authorities that it is not possible, in a brief review, to justly survey it. This volume will be of value to anyone wanting information about the oil industry, and to those engaged in the business it should prove an excellent working tool.

C. K. F.

NEW SUPERINTENDENT, BARTLESVILLE STATION

Announcement has been made of the appointment of Nicholas A. C. Smith to be superintendent of the United States Bureau of Mines experiment station at Bartlesville, Okla., succeeding E. P. Campbell, who resigned May 1 to become production engineer of the Pure Oil Co. at Tulsa.

Mr. Smith has been a resident of Bartlesville for three years and has been a member of the technical staff of the bureau and connected with its operations in various capacities during that time. He is a native of Massachusetts and a graduate of the public schools of Wellesley and the Clark University of Worcester, receiving his degree of A. B. from the latter institution in 1909.

GAS COMPANY SOLD

SHREVEPORT, La., May 29.—Sale of the Mansfield Gas Co.'s franchise and physical properties to the Louisiana Public Utilities Co. for a price reported at $173,000, was announced yesterday. The gas company supplies gas to Mansfield and South Mansfield. The company was organized in 1912 by W. B. McCormick and J. H. Thatcher. Since organization Mr. Thatcher has retired most of the stock in the company and was its president at the time of the sale. J. A. Collier, Oakdale, La., will be superintendent under the new ownership and the present personnel of the company will be retained.

AMERADA NAME CHANGE

At the annual meeting of Amerada Corporation, Murray Doan was elected a director. A proposed change in the name of the company to Amerada Oil Corp. was continued to a special meeting to be held June 17.

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DELEGATES APPOINTED ON POLLUTION BY OIL

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., May 29.—The Department of State announces that President Coolidge has appointed the American delegates at the preliminary international conference of experts on oil pollution of navigable waters, to meet in this city June 8. Former Senator Joseph S. Frelinghuysen of New Jersey, will head the American delegation. Mr. Frelinghuysen introduced the first bill in Congress to control oil pollution of navigable waters and is now chairman of the executive committee of the National Anti-Pollution and Conservation League. Other delegates will be Stephen Davis, solicitor of the Department of Commerce and Dr. Arthur N. Young, economic adviser of the Department of State and chairman of the Inter-Department Committee on Oil Pollution of Navigable Waters.

Paul T. Culbertson, assistant to the economic adviser of the Department of State, will be the secretary of the American delegation. Technical assistance will be provided by the members of the interdepartmental committee, which has the following members (besides Doctor Young, chairman): Dr. R. R. Sayers, chief surgeon, Bureau of Mines; Maj. G. R. Young, War Department; Capt. G. S. Lincoln, Navy Department; Talbott Denmead, Department of Agriculture; Dr. Lewis Radcliffe, Deputy Commissioner of fisheries of the Commerce Department; and W. S. Maginnis, of the Shipping Board.

The delegates will also be assisted by D. V. Stroop, Bureau of Standards. Jay Pierrepont Moffat, first secretary of embassy, will serve as special assistant. The invitations to the conference were sent to Belgium, Denmark, France, Germany, Great Britain, Greece, Italy, Japan, The Netherlands, Norway, Spain and Sweden. All have accepted except Belgium and Greece.

PRESIDENT C. K. CLARK RECEIVES LOVING CUP

SREVEPORT, La., May 29.—As a token of friendship and esteem, Charles Kelly Clark, president of the Standard Oil Co. of Louisiana, received a huge silver loving cup at a banquet given at the Shreveport Country Club attended by more than 200 oil men from Louisiana, Arkansas and Texas.

Described as the greatest of old timers, Mr. Clark's 40 years of service under one industrial flag, was related by the various speakers. Joseph McCue, vice president of The Texas Company, and George Baird, president of the Louisiana-Arkansas division of the Mid-Continent Oil and Gas Association, both old friends of Mr. Clark, recalled humorous incidents in the honor guest's life.

Capt. J. F. Lucey and Judge T. J. Gaughan, Camden, Ark., were among the other speakers who paid tribute to Mr. Clark. The gathering was described as the most notable of its kind ever assembled in Shreveport.

Each guest received a liberally illustrated booklet reviewing Mr. Clark's life and revealing several humorous incidents. Mr. Clark was chosen to head his company last February and is moving to Baton Rouge, La. Henry Walker, head of the legal department of the Louisiana Oil & Refining Corp., was toastmaster.

CANADIAN FIELDS HIGHWAY

CHATHAM, Ont., May 29.—Alex Ross, minister of public works for Alberta, has announced that the road into the Turner Valley oil field will be established as a permanent highway, improvement work to commence at once. Oil companies, in view of the heavy traffic over the road, are contributing a considerable sum to supplement what the provincial government will spend. The government will be responsible for maintenance of the road.

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WHAT AND WHERE TO BUY

A Classified Index of Advertisers in This Publication
For Alphabetical Index See Page 25

A

Absorption Plant Equipment—
American Radiator Co.
Braun, C. F., & Co.
Campbell, J. A.
Cooper, C. & G. Co.
Griscom-Russell Co.
National Gas Products Co.
Newton Process Mfg. Co.
Ross Heater & Mfg. Co., Inc.
Southwestern Engineering Co., Inc.
Southwestern Engineering Corp.

Absorption Towers—
Hope Engineering & Supply Co.
National Gas Products Co.
Newton Process Mfg. Co.

Acetylene Apparatus—
Oxweld Acetylene Co.

Acetylene—Dissolved—
Prest-O-Lite Co., Inc.

Acetylene in Cylinders—
Prest-O-Lite Co., Inc.

Agitators —
Chicago Bridge & Iron Works.
Kaw Steel Construction Co.
Petroleum Iron Works Co.

Alloy Steel (See Steel—Alloy)—

All-Steel Drilling Rigs (See Rigs)

Aluminum Bronze Powder for Paint—
Aluminum Co. of America.

Ammonia—
Mathieson Alkali Works, Inc.

Anchor Clamps (See Clamps)—

Antimonial Leads—
Eagle Picher Lead Co.

Apparatus—Electric—
Westinghouse Electric & Mfg. Co.

Apparatus—Motor Control—
Westinghouse Electric & Mfg. Co.

Appraisers—
American Appraisal Co.

Arches—Flat Suspended—
Brady Conveyor Corp.

B

Babbitts—
Eagle-Picher Lead Co.
Ryerson, Jos. T. & Sons, Inc.

Back Up Tongs (See Tongs)—

Bailers—
Oil Well Supply Co.
Spang & Co.

Balls and Seats—
Axelson Machine Co.
Hough, Charles N., Mfg. Co.
Norris Brothers, Inc.
Northrup Equipment Co.

Balls—Bronze—
Atlas Ball Co.
Hoover Steel Ball Co.

Balls—Steel—
Atlas Ball Co.
Hoover Steel Ball Co.
Strom Steel Ball Co.

Band Wheels—Steel—
International Derrick & Equipment Co.
Marion Mch., Fdy. & Supply Co.
Moore, Lee C. & Co., Inc.
Parkersburg Rig & Reel Co.

Barrels—
Petroleum Iron Works Co.

Batteries—
National Carbon Co.

Bearings—Roller—
American Roller Bearing Co.
Timken Roller Bearing Co.

Bearings—Thrust—
Timken Roller Bearing Co.

Belting—
Bridgeport Machine Co.
Continental Supply Co.
Fenwick-Reddaway Mfg. Co.
Frick-Reid Supply Co.
Imperial Belting Co.
International Supply Co.
Murray Rubber Co.
Stanley Belting Corp.
Victor Balata & Textile Belting Co.

Belting—Rubber—
Bovaird Supply Co.
Goodyear Tire & Rubber Co.
United States Rubber Co.

Belt Lacing—
Flexible Steel Lacing Co.

Bits—Disc—
U. S. Tool Co.

Bits—Fish Tail—
Federal Supply Co.
Lucey Mfg. Corp.

Bits—Rotary Disc—
Hughes Tool Co.

Bits Rotary Rock—
Hughes Tool Co.
Reed Roller Bit Co.

Bit Steel (See Steel—Bit)—

Bleaching Powder—
Mathieson Alkali Works, Inc.

Blow-off Valves (See Valves)—

Blowout Preventer—
Regan Forge & Engineering Co.
Stearns-Roger Mfg. Co.

Blowpipes—
Oxweld Acetylene Co.

Boiler Feed Pumps (See Pumps)

Boilers—Horizontal Return Tubular—
Brownell Co., The
Kewanee Boiler Co.
Vogt, Henry, Machine Co.

Boilers—Oil County—
Bovaird & Seyfang Mfg. Co.
Bridgeport Machine Co.
Brownell Co., The
Coatesville Boiler Works.
Continental Supply Co.
Donovan Boiler Works.
Frick-Reid Supply Co.
International Supply Co.
Kewanee Boiler Co.
Lucey Mfg. Co.
National Supply Co.
Oil Well Supply Co.
Pattin Bros. Co.
Republic Supply Co.
Titusville Iron Works.

Bolted Tanks (See Tanks)—

Bolts and Nuts—
Sheffield Steel Corp.

Bolt Threading Machines—
Landis Machine Co.

Bottles—Glass—
Illinois Glass Co.

Box and Pin Steel—
Andrews Steel Co.
Heppenstall Forge & Knife Co.

Braces—Tool—
Dunn Mfg. Co.

Break Out Tongs (See Tongs)—

Briquetting Machines—
Simplex Equipment Co.

Bronze Valves (See Valves—Brass and Bronze)—

Buildings—Metals, Sectional (All Types)—
Austin Co.
Braden Co.
Butler Mfg. Co.
International Derrick & Equipment Co.
Marion Mch., Fdy. & Supply Co.
Swartwout Co.
Truscon Steel Co.

Bulk Station Tanks (See Tanks)

Bull Ropes—
Ajax Rope Co., Inc.
Columbian Rope Co.
Plymouth Cordage Co.
Wall Rope Works, Inc.

Bull Wheels—Steel—
International Derrick & Equipment Co.
Marion Mch., Fdy. & Supply Co.
Moore, Lee C. & Co., Inc.
Parkersburg Rig & Reel Co.

Burners—Gas—
Eureka Burner Co.
Okmulgee Boiler & Welding Works.

Burners—Oil—
Continental Supply Co.
Reid, Joseph, Gas Engine Co.

Bushings—Rotary Drive—
Wilson Oil Tools Corp.

C

Cable Bit Steel—
Andrews Steel Co.
Federal Supply Co.
Heppenstall Forge & Knife Co.

Cables—Drilling, Manila—
Ajax Rope Co., Inc.
Columbian Rope Co.
Continental Supply Co.
Frick-Reid Supply Co.
Plymouth Cordage Co.
Wall Rope Works, Inc.

Cables—Steel—
Ajax Rope Co., Inc.
American Cable Co.
Black Steel & Wire Co.
Broderick & Bascom Rope Co.
Continental Supply Co.
Frick-Reid Supply Co.
Hazard Mfg. Co.
Leschen, A. & Sons Rope Co.
Murray Tool & Supply Co.
National Supply Co.
Republic Supply Co.
Wickwire-Spencer Steel Corp.
Williamsport Wire Rope Co.

Calf Rope—
Ajax Rope Co., Inc.

Calf Wheels—Steel—
International Derrick & Equipment Co.
Moore, Lee C. & Co., Inc.

Cannon—Oil Field—
Braden Co.

Cans—Water—
Gott, H. P., Mfg. Co.

Capping Steel—
Andrews Steel Co.

Carbon—Black Diamond—
Diamond Drill Carbon Co.
Patrick, R. S.

Cars—Tanks—
American Car & Foundry Co.
General American Tank Car Corp.
Shippers' Car Line, Inc.

Cars—Tank, Leased—
American Car & Foundry Co
North American Car Co.
Shippers' Car Line, Inc.

Casing—
Bovaird Supply Co.
Central Tube Co.
Continental Supply Co.
Emsco Derrick & Equip. Co.
Jarecki Mfg. Co.
National Supply Co.
National Tube Co.
South Chester Tube Co.
Spang, Chalfant & Co., Inc.
Superior Tube Co.
Wheeling Steel Corp.

Casing—Wrought Iron—
Byers, A. M. Co.
South Chester Tube Co.

Casing Elevators (See Elevators, Casing and Tubing)—

Casinghead Gasoline Equipment—(See Natural Gasoline Plant Equipment)—

Casing Heads—
Arbon, Paul, & Co.
Dresser, S. R., Mfg. Co.
Kansas City Hay Press Co.
Oil Well Improvements Co.

Casing Lines—
Ajax Rope Co., Inc.

Casing Packers (See Packers)—

Casing Pulleys (See Pulleys)—

Casing Shoes—
Baker Casing Shoe Co.
Bartlesville Supply Co.
Bridgeport Machine Co.
Guiberson Corp.
Oil Well Supply Co.

Casings Tongs (See Tongs)—

Castings—Alloy Steel—
Ohio Steel Foundry Co.
Sivyer Steel Casting Co.

Castings—Brass—
Progressive Brass Mfg. Co.

Castings—Chrome Nickel Steel—
Sivyer Steel Casting Co.

Castings—Corrosion Resisting Non Ferrous—
Hills-McCanna Co.

Castings—Electric Steel—
Ohio Steel Foundry Co.
Sivyer Steel Casting Co.

Castings—Grey Iron—
Ajax Iron Works.
American Car & Foundry Co.
Gaso Pump & Burner Mfg. Co.
Pittsburgh Boiler & Machine Co.

Castings—Steel—
Ajax Iron Works.
Chicago Steel Foundry Co.
Ohio Steel Foundry Co.
Sivyer Steel Casting Co.

Cement—Fire and High Temperature—
Botfield Refractories Co.

Centrifugal Pumps (See Pumps)

Chain Pipe Tongs (See Tongs)—

Chains—Conveying—
Chain Belt Co.
Link-Belt Co.

Chains—Oil Well—
Baldwin Chain & Mfg. Co.
Chain Belt Co.
Link-Belt Co.

Chains—Power Transmission—
Baldwin Chain & Mfg. Co.
Chain Belt Co.
Link-Belt Co.

Check Valves (See Valves)—

Chemical Treatment Crude Oil Emulsion—
Barnickel, Wm. S., & Co.

Chlorine—Liquid—
Mathieson Alkali Works, Inc.

Chrome Nickel Steel Castings (See Castings)—

Circulating Heads—
Wilson Oil Tools Corp.

Clamps—Anchor—
Bartlesville Supply Co.

Clamps—Belt—
Federal Supply Co.
Victor Balata & Textile Belting Co.

Clamps—Collar Leak—
Dayton Pipe Coupling Co.
Dresser, S. R., Mfg .Co.

Clamps—Drilling—
Western Supply Co.

Clamps—Hoisting—
Newton Process Mfg. Co.

Clamps—Pipe—
Dayton Pipe Coupling Co.
Dresser, S. R., Mfg. Co.

Clamps—River—
Dresser, S. R., Mfg. Co.
Gaso Pump & Burner Mfg. Co.

Cloths—Wiping—
Nye Tool & Machine Works.

Clutches—Friction, Plate Type—
Twin Disc Clutch Co.

Cocks—Brass and Iron—
Lunkenheimer Co.
Walworth Mfg. Co.

Cocks—Plug—
Homestead Valve Mfg. Co.

Cocks—Water Gauge—
Smith Separator Co.

Coils and Bends—Pipe—
Harrisburg Pipe & Pipe Bending Co.
Midwest Piping & Supply Co.

Collar Leak Clamps—(See Clamps)

Compounds—Boiler—
Dearborn Chemical Co.

Compounds—Joint Sealing—
Key Boiler Equipment Co.

Compressor Cylinders (See Cylinders—Compressor)—

Compressors—Air—
Bessemer Gas Engine Co.
Clark Brothers Co.
Cooper, C. & G. Co.
Gardner Governor Co.
Ingersoll-Rand Co.
Sullivan Machinery Co.

Compressors—Ammonia—
Carbondale Machine Co.
Cooper, C. & G. Co.

Compressors—Direct Connected Motor and Gas Engine Driven
Buffalo Gasolene Motor Co.
Clark Brothers Co.
Cooper, C. & G., Co.
Miller Improved Gas Engine Co.

Compressors—Direct Driven Air and Gas—
Bessemer Gas Engine Co.
Miller Improved Gas Engine Co.

Compressors—Gas—
Bessemer Gas Engine Co.
Chicago Pneumatic Tool Co.
Clark Brothers Co.
Cooper, C. & G., Co.
Hope Engineering & Supply Co.
Ingersoll-Rand Co.
National Transit Pump & Machine Co.
Worthington Pump & Machinery Corp.

Condenser Boxes—
Kaw Steel Construction Co.
Petroleum Iron Works Co.

Condensers—
American Radiator Co.
Chicago Pneumatic Tool Co.
National Gas Products Co.
Ross Heater & Mfg. Co.
Southwestern Engineering Co., Inc.
Southwestern Engineering Corp.

Consulting and Contracting Engineers (See Engineers)—

Controllers—Liquid Level—
Fisher Governor Co., Inc.
Newton Process Mfg. Co.
Smith Separator Co.

Controllers—Pressure—
Smith Separator Co.

Controllers—Temperature—
Brown Instrument Co.
Foxboro Co., Inc.
Taylor Instrument Co.

Conveying & Elevator Machinery—
Brady Conveyors Corp.

Conveyors—Bucket and Belt—
Brady Conveyors Corp.

Conveyors—Pneumatic—
Brady Conveyors Corp.

Conveyors—Portable Belt—
Barber-Greene Co.

Cooling Towers—Atmospheric—
Braun, C. F., & Co.
National Gas Products Co.

Cordage—
Bridgeport Machine Co.
International Supply Co.
Plymouth Cordage Co.

Core Drilling—
Longyear, E. J., Co.
Mineral Exploration Co.

Core Drills—Diamond—
Longyear, E. J., Co.
Sullivan Machinery Co.

Coring Tools—
Reed Roller Bit Co.
Wilson Oil Tools Corp.

Couplings—Flexible—
Nuttall, R. D., & Co.
Victaulic Co. of America.

Couplings—Plain End Pipe—
Dayton Pipe Coupling Co.
Dresser, S. R., Mfg. Co.

Couplings—Seamless Steel—
Harrisburg Pipe & Pipe Bending Co.
Superior Tube Co.

Couplings—Steel for Casing, Line Pipe, Drill Pipe and Tubing—
Dayton Pipe Coupling Co.
Smith, A. O., Corp.

Cracking Processes—
Graver Corp.
Kellogg, M. W., Co.
Universal Oil Products Co.

Crawler Treads—
Full Crawler Co.

Crown Blocks—
International Derrick & Equipment Co.
Lucey Mfg. Corp.
Moore, Lee C., & Co., Inc.
Parkersburg Rig & Reel Co.

Cups—Composition—
Williamsport Development Co.

Cups—Leather—
Auer, C. A.

Cutters—Pipe—
Borden Co.
Nye Tool & Machine Works.
Trimont Mfg. Co.

Cylinders—Compressor—
Hope Engineering & Supply Co.

Cylinder Stocks—
Barnsdall Refining Co.
Pure Oil Co.
Texas Company, The

D

Dehydrating Process—
Barnickel, Wm. S., & Co.

Dephlegmators—
National Gas Products Co.
Newton Process Mfg. Co.
Smith, A. O. Corp.

Depletion Reports—
American Appraisal Co.

Derricks—Steel—
Emsco Derrick & Equip. Co.
International Derrick & Equipment Co.
Marion Mch., Fdy. & Supply Co.
Moore, Lee C., & Co., Inc.
O'Brien Steel Construction Co.
Parkersburg Rig & Reel Co.
Superior Tube Co.

Derricks—Turnbuckle—
National Turnbuckle Derrick Co.

Diamond Core Drills (See Core Drills—Diamond)—

Diamonds for Core Drilling (See Carbon—Black Diamond)—

Die Heads—Automatic Screw Cutting—
Landis Machine Co.

Die Heads—Bolt Threading—
Bignall & Keeler Machine Works.
Ladis Machine Co.

Die Heads—Stationary Pipe Threading—
Bignall & Keeler Machine Works.
Cox & Sons Co., The
Landis Machine Co.

Diesel Engines (See Engines)—

Dies—Pipe Threading—
Bignall & Keeler Machine Works.
Cox & Sons Co., The
Landis Machine Co.
Nye Tool & Machine Works.

Differential Pressure Recorders (See Recorders)—

Direct Driven Pumps (See Pumps)

Disc Bits (See Bits—Disc)—

Dissolved Acetylene (See Acetylene)—

Ditchers—Pipe Line—
Barber-Greene Co.
Buckeye Traction Ditcher Co.

Draw Works—
Lucey Mfg. Corp.
National Supply Co.
Titusville Iron Works Co.

Drillers Hose (See Hose)—

Drilling and Fishing Tools—
Acme Fishing Tool Co.
Baash-Ross Tool Co.
Bovaird & Seyfang Mfg. Co.
Bovaird Supply Co.
Bridgeport Machine Co.
Brown Tool Co., Inc.
Burns Tool Co.
Continental Supply Co.
Cushing, Tim, Tool & Supply Co.
Emsco Derrick & Equip. Co.
General Oil Tools Co.
Hinderliter Tool Co.
Hughes Tool Co.
International Supply Co.
Larkin & Co.
Leidecker Tool Co.
Lucey Mfg. Corp.
Murray Tool & Supply Co.
Oil Well Supply Co.
Reed Roller Bit Co.
Regan Forge & Engineering Co.
Spang & Co.
Star Drilling Machine Co.
U. S. Tool Co.

Drilling Engines (See Engines)—

Drilling Equipment—
Clark Brothers Co.
Hughes Tool Co.
O'Brien Steel Construction Co.
Oil Well Supply Co.
Parkersburg Rig & Reel Co.
Reed Roller Bit Co.
Star Drilling Machine Co.

Drilling Gate Valves (See Valves)

Drilling Machines—
Leidecker Tool Co.
Oil Well Supply Co.
Star Drilling Machine Co.

Drilling Tools (See Drilling and Fishing Tools)—

Drilling Valves (See Valves)—

Drills—Portable Air—
Chicago Pneumatic Tool Co.

Drive Shoes—
Bartlesville Supply Co.
Larkin & Co.

Drop-Forged Wrenches (See Wrenches)—

Drops and Seats—
Norris Brothers, Inc.

Drums (See Barrels)—

Dynamos—
Westinghouse Electric & Mfg. Co.

E

Electrical Equipment—
Fairbanks-Morse & Co.
Pyle National Co.
Wico Electric Co.

Electrical Apparatus (See Apparatus—Electric)—

Electric Drilling Equipment—
Lucey Mfg. Corp.
Westinghouse Electric & Mfg. Co.

Electric Steel Castings—See Castings—Electric Steel)—

Elevators—Casing and Tubing—
Bovaird Supply Co.
Bridgeport Machine Co.
Dunn Mfg. Co.
Lucey Mfg. Corp.
Oil Well Supply Co.
Wilson Oil Tools Corp.

Elevators—Rod—
B. & A. Specialty Co.
D & B Pump & Supply Co.
Dunn Mfg. Co.

Enamels—
Arco Company, The
Detroit Graphite Co.
Sherwin-Williams Co.

Engineers—Consulting and Contracting—
Brooks Engineering Corp.
Hope Engineering & Supply Co.
Kellogg, M. W., Co.
McKee, Arthur G., & Co.
Power Specialty Co.
Westcott & Greis.
Widdell Engineering Co.

Engineers—Fire Protection—
Brooks Engineering Corp.
Foamite-Childs Corp.
Engineers—Oil Buildings—
Austin Co.
International Derrick & Equipment Co.
Engineers—Oil Treating—
Barnickel, Wm. S., & Co.
National Gas Products Co.
Engines—Crude Oil—
Continental Supply Co.
Western Machinery Co.
Engines—Diesel—
Bessemer Gas Engine Co.
Busch-Sulzer Bros. Diesel Engine Co.
Foos Gas Engine Co.
McIntosh & Seymour Corp.
Western Machinery Co.
Worthington Pump & Machinery Corp.
Engines—Drilling—
Ajax Iron Works.
Beaver Manufacturing Co.
Bessemer Gas Engine Co.
Bovaird & Seyfang Mfg. Co.
Brownell Co., The
Buda Co.
Buffalo Gasolene Motor Co.
Clark Bros. Co.
Climax Engineering Co.
Franklin Valveless Engine Co.
Hercules Motor Corp.
Fattin Bros. Co.
Power Mfg. Co.
Republic Supply Co.
Titusville Iron Works Co.
Engines—Gas—
Beaver Manufacturing Co.
Bessemer Gas Engine Co.
Bruce-MacBeth Engine Co.
Buda Co.
Buffalo Gasolene Motor Co.
Chicago Pneumatic Tool Co.
Clark Bros. Co.
Climax Engineering Co.
Continental Supply Co.
Cooper, C. & G., Co.
Emsco Derrick & Equipment Co.
Foos Gas Engine Co.
Franklin Valveless Engine Co.
Frick-Reid Supply Co.
Hope Engineering & Supply Co.
Ingersoll-Rand Co.
International Supply Co.
Jones, S. M., Co.
Marion Mch. Fdy. & Supply Co.
Miller Improved Gas Engine Co.
National Supply Co.
National Transit Pump & Machine Co.
Oil Well Supply Co.
Pattin Bros. Co.
Reid, Joseph, Gas Engine Co.
Titusville Iron Works Co.
Waukesha Motor Co.
Western Machinery Co.
Engines—Gasoline—
Beaver Manufacturing Co.
Buda Co.
Buffalo Gasolene Motor Co.
Continental Motors Corp.
Fairbanks-Morse & Co.
Hercules Motor Corp.
International Harvester Co. of America.
Novo Engine Co.
Waukesha Motor Co.
Western Machinery Co.
Engines—Oil—
Bessemer Gas Engine Co.
De La Vergne Machine Co.
Fairbanks-Morse & Co.
Franklin Valveless Engine Co.
International Harvester Co. of America.
Ingersoll-Rand Co.
McIntosh & Seymour Corp.
National Supply Co.
Oil Well Supply Co.
Power Mfg. Co.
Reid, Joseph, Gas Engine Co.
Western Machinery Co.
Engines—Semi-Diesel, Oil—
Chicago Pneumatic Tool Co.
Engines—Steam—
Ajax Iron Works.
Frick-Reid Supply Co.
Lucey Mfg. Corp.
National Supply Co.
Oil Well Supply Co.
Evaporators—
Newton Process Mfg. Co.
Ross Heater & Mfg. Co., Inc.
Extinguishers—Fire—
Foamite-Childs Corp.

F

Fabricators for Gasoline Plants and Refineries—
National Gas Products Co.
Stearns-Rogers Mfg. Co.
Filters—Oil—
Burt Mfg. Co.
Fishing Tools (See Drilling and Fishing Tools)—
Fittings—Dropped Forged Steel—
Vogt, Henry, Machine Co.
Fittings—Malleable & Cast Iron—
Bovaird Supply Co.
Crane Co.
Frick-Reid Supply Co.
Walworth Mfg. Co.
Fittings—Pipe—
Dayton Pipe Coupling Co.
Dresser, S. R., Mfg. Co.
Gaso Pump & Burner Mfg. Co.
Jarecki Mfg. Co.
Kellogg, M. W., Co.
Kennedy Valve Mfg. Co.
Metric Metal Works.
Oil Well Supply Co.
Reading Steel Casting Co.
Republic Supply Co.
United Iron Works, Inc.
Victaulic Co. of America.
Fittings—Steel—
Dayton Pipe Coupling Co.
Kerotest Mfg. Co.
Ohio Steel Foundry Co.
Flanges—Brass, Iron and Steel—
Jefferson Union Co.
Metric Metal Works.
Flange Unions—
Gaso Pump & Burner Mfg. Co.
Flashlights—
National Carbon Co.
Floating Roofs and Decks—
Chicago Bridge & Iron Works.
Floodlights—
Pyle-National Co.
Forging Billets—
Andrews Steel Co.
Harrisburg Pipe & Pipe Bending Co.
Heppenstall Forge & Knife Co.
Forgings—
Champion Machine & Forging Co.
Friction Clutch Pulleys (See Pulleys)—
Fuel Oil (See Oil—Fuel)—
Fuller's Earth—
Sinclair Refining Co.

G

Gas Compressors (See Compressors—Gas)—
Gas Engines (See Engines—Gas)
Gas Holders—
Chicago Bridge & Iron Works.
Gaskets—
Garlock Packing Co.
McCord Radiator & Mfg. Co.
Gaskets—Fibre—
Durabla Mfg. Co.
Gas Masks & Safety Appliances—
Mine Safety Appliance Co.
Gas Meters (See Meters)—
Gas Oil (See Oil—Gas)—
Gasoline—
Berry's, James B., Sons Co.
Crown Central Petroleum Co.
Empire Refineries, Inc.
Gulf Refining Co.
Magnolia Petroleum Co.
Pure Oil Co.
Sinclair Refining Co.
Skelly Oil Co.
Gasoline—Natural—
Chestnut & Smith Corp.
National Gas Products Co.
Skelly Oil Co.
Warren Petroleum Co.
Gasoline Plant Equipment—
Bessemer Gas Engine Co.
Clark Brothers Co.
Kellogg, M. W., Co.
McKee, Arthur G., & Co.
National Gas Products Co.
Newton Process Mfg. Co.
Ross Heater & Mfg. Co., Inc.
Widdell Engineering Co.
Gas Regulator Casinghead—
Davis, G. M., Regulator Co.
National Gas Products Co.
Gas Scrubbers—
National Gas Products Co.
Newton Process Mfg. Co.
Gauge Glass—High Pressure—
Durabla Mfg. Co.
Gauge Poles—
Marsh Gauge Pole Co.
Gauges—Automatic Tank—
Brooks Engineering Co.
Gauges—Pressure and Vacuum—
Bristol Co.
Equitable Meter & Mfg. Co.
Metric Metal Works.
Gauges—Test—
Equitable Meter & Mfg. Co.
Metric Metal Works.
Gear Driven Pumps (See Pumps)
Gears—Cut—
Nuttall, R. D., & Co.
Gears—Reduction—
Emsco Derrick & Equipment Co.
Nuttall, R. D., & Co.
Gears—Reverse—
Emsco Derrick & Equipment Co.
Generators—
Westinghouse Electric & Mfg. Co.
Generators—Acetylene—
Oxweld Acetylene Co.
Generators—Turbine —
Moon Manufacturing Co.
Pyle-National Co.
Westinghouse Electric & Mfg. Co.
Glassware—Chemical for Laboratory Use—
Illinois Glass Co.
Governors—
Equitable Meter & Mfg. Co.
Gardner Governor Co.
Governors—Boiler Feed—
Chaplin-Fulton Mfg. Co.
Fisher Governor Co.
Grey Iron Castings (See Castings)

H

Hammers—Chipping and Calking Pneumatic—
Chicago Pneumatic Tool Co.
Hammers—Riveting Pneumatic—
Chicago Pneumatic Tool Co.
Hangers—Iron and Steel—
Continental Supply Co.
Dodge Mfg. Corp.
Hangers—Tubing—
Hercules Tool Co.
Hatches—Gauges and Thief—
Oil Conservation Engineering Co.
Heat Exchangers —
Carbondale Machine Co.
Griscom-Russell Co.
Hope Engineering & Supply Co.
National Gas Products Co.
Newton Process Mfg. Co.
Ross Heater & Mfg. Co.
Southwestern Eingineering Co., Inc.
Southwestern Engineering Corp.
Heat Exchangers—Fluid—
Braun, C. F., & Co.
Ross Heater & Mfg. Co., Inc.
High Pressure Gate Valves (See Valves)—
Hoists—Pneumatic, Geared and Universal—
Chisholm-Moore Mfg. Co.
Yale & Towne Mfg. Co.
Hoists—Portable—
Chisholm-Moore Mfg. Co.
Ford Chain Block Co.
Sullivan Machinery Co.
Wright Mfg. Co.
Yale & Towne Mfg. Co.
Hooks for Rods and Tubing—
B. & A. Specialty Co.
Dunn Mfg. Co.
Hose—
Fenwick-Reddaway Mfg. Co.
Hose—Drillers—
Goodrich, B. F., Rubber Co.
United States Rubber Co.
Hose—Oil Suction and Discharge
Goodrich, B. F., Rubber Co.
United States Rubber Co.
Hose—Rubber—
Goodyear Tire & Rubber Co.
United States Rubber Co.
Hot Rolled Strip Steel (See Steel)
Hydraulic Jacks (See Jacks)—
Hypochlorite of Lime—
Mathieson Alkali Works, Inc.

I

Insulation Materials —
Celite Products Co.
Johns-Manville, Inc.
Insurance—Fire—
Oil Insurance Association
Insurance—Tornado—
Oil Insurance Association
Iron—Ingot—
American Rolling Mill Co.

J

Jacks—Hydraulic—
Bridgeport Machine Co.
Jacks—Lifting—
Templeton, Kenly & Co., Ltd.
Jacks—Pumping—
American Mfg. Co. of Texas.
American Wells Works.
Bessemer Gas Engine Co.
Braden Co.
Frick-Reid Supply Co.
Jones, S. M., Co.
Kansas City Hay Press. Co.
Norris, W. C.
Spang & Co.
Jars—
Arbon, Paul, & Co.
Bridgeport Machine Co.
Spang & Co.
Jar Steel—
Andrews Steel Co.
Heppenstall Forge & Knife Co.

K

Kerosene—
Empire Refineries, Inc.
Gulf Refining Co.
Magnolia Petroleum Co.
Pure Oil Co.

L

Lacquers—
Arco Company, The
Sherwin-Williams Co.
Lanterns—Electric—
Delta Electric Co.
Lead and Mixed Metal Products—
Eagle-Picher Lead Co.
Lead in Oil—
Eagle-Picher Lead Co.
National Lead Co.
Lead Wool and Containers—
Eagle-Picher Lead Co.
Lifting Jacks—(See Jacks)—
Lighting Equipment—
Pyle National Co.
Westinghouse Electric & Mfg. Co.
Liquid Level Controls (See controllers)—
Litharge—
Eagle-Picher Lead Co.
National Lead Co.
Loaders—Trucks—
Barber-Greene Co.
Long Distance Telephone—
American Telephone & Telegraph Co.
Lubricating Devices—
McCord Radiator & Mfg. Co.
Lubricating Oils (See Oils)—
Lubricators—
Ajax Iron Works.
Lunkenheimer Co.
Lubricators—Force Feed—
Manzel Brothers Co.
McCord Radiator & Mfg. Co.

M

Machine Tools—
Ryerson, Jos. T., & Sons, Inc.
Manholes—Tank—
Brooks Engineering Corp.
Manifolds—
Reid, Joseph, Gas Engine Co.
Meters—Gas—
Equitable Meter & Mfg. Co.
Foxboro Co., Inc.
Metric Metal Works.
Pittsburgh Meter Co.
Roots, P. H. & F. M., Co.
Westcott & Greis.
Meters—Gasoline—
Pittsburgh Meter Co.
Meters—Oil—
Pittsburgh Meter Co.
Molded Goods—Rubber—
Goodyear Tire & Rubber Co.
Motors—Electric—
Fairbanks-Morse & Co.
Westinghouse Electric & Mfg. Co.
Motors—Gasoline (See Engines—Gasoline)—
Motor Trucks (See Trucks—Motor)—

N

Naphtha—
Pure Oil Co.
Natural Gasoline (See Gasoline—Natural)—
Natural Gasoline Plant Equipment
Campbell, J. A.
Cooper, C. & G., Co.
Griscom-Russell Co.
National Gas Products Co.
Roots, P. H. & F. M., Co.
Ross Heater & Mfg. Co., Inc.
Smith Separator Co.
Westcott & Greis.
Nitrogen—
Linde Air Products Co.
Nozzles—Spray—
Power Plant Equip Co.

O

Oil and Gas Pipe Line Construction—
Hope Engineering & Supply Co.
Oil Burners (See Burners—Oil)—
Oil Field Equipment—
Baker Casing Shoe Co.
Bridgeport Machine Co.
Gaso Pump & Burner Mfg. Co.
International Derrick & Equipment Co.
Iron King Mfg. Co.
Kaw Steel Construction Co.
National Supply Co.
Oil Well Supply Co.
Parkersburg Machine Co.
Parkersburg Rig & Reel Co.
Reed Roller Bit Co.
Regan Forge & Engineering Co.
Reid, Joseph, Gas Engine Co.
Republic Supply Co.
Simplex Equipment Co.
Trumble Gas Trap Co.
Oil—Fuel—
Crown Central Petroleum Corp.
Empire Refineries, Inc.
Gulf Refining Co.
Magnolia Petroleum Co.
Pure Oil Co.
Sinclair Refining Co.
Texas Company, The
Oil—Gas—
Crown Central Petroleum Corp.
Gulf Refining Co.
Pure Oil Co.
Sinclair Refining Co.
Texas Company, The
Oil—Lubricating—
Barnsdall Refining Co.
Berry's James B., Sons Co.
Crown Central Petroleum Corp.
Empire Refineries, Inc.
Gulf Refining Co.
Humble Oil & Refining Co.
Magnolia Petroleum Co.
Pennzoil Co.
Pure Oil Co.
Sinclair Refining Co.
Skelly Oil Co.
Texas Company, The
Oil—Tractor—
Barnsdall Refining Co.
Gulf Refining Co.
Pennzoil Co.
Pure Oil Co.
Skelly Oil Co.
Oiling Devices—
Lunkenheimer Co.
Oil Meters (See Meters)—
Oil Piping Equipment (See Fittings)—
Oil Reclaiming Process—
Barnickel, Wm. S., & Co.
Houston Pump & Supply Co.
Oil Refinery Equipment (See Refinery Equipment)—
Oil Securities (See Securities)—
Oil Suction and Discharge Hose—(See Hose)—
Oil Well Cementing—
Halliburton Oil Well Cementing Co.
Oil Well Screens (See Screens)—
Oil Well Tools—
D & B Pump & Supply Co.
Hinderliter Tool Co.
Reed Roller Bit Co.
Titusville Forge Co.
U. S. Tool Co.
Over Shots—
Reed Roller Bit Co.
Regan Forge & Engineering Co.
Oxygen—
Linde Air Products Co.

P

Packer Release—
Acme Fishing Tool Co.
Packers—
Goodyear Tire & Rubber Co.
Gulberson Corp.
Larkin & Co.
Layne & Bowler Co.
Meier, E. C., Lubricating Co.
Oil Well Supply Co.
Regan Forge & Engineering Co.
Spang & Co.
United States Rubber Co.
Packing—
Crane Packing Co.
Durabla Mfg. Co.
Garlock Packing Co.
Goodrich, B. F., Rubber Co.
Imperial Belting Co.
Johns-Manville, Inc.
Packing—Metallic—
Crane Packing Co.
Paint Guns—
Binks Spray Equipment Co.
Painting Equipment—Mechanical
Matthews, W. N. Corp.
Paints—
Aluminum Co. of America
American Asphalt Paint Co.
Arco Company, The
Cook Paint & Varnish Co.
Detroit Graphite Co.
Dixon, Joseph Crucible Co.
Du Pont de Nemours, E. I., & Co., Inc.
Eagle-Picher Lead Co.
Eclipse Paint & Mfg. Co.
Hill Hubbell & Co.
National Lead Co.
Sherwin-Williams Co.
St. Louis Surfacer & Paint Co.
Pipe—Cast Iron—
Greenspon's Jos., Sons Iron & Steel Co.
International Supply Co.
U. S. Cast Iron Pipe & Fdy. Co.
Pipe—Lead Chemical and Antimonial—
Eagle-Picher Lead Co.
Pipe—Steel—
Central Tube Co.
Continental Supply Co.
Greenspon's Jos., Sons Iron & Steel Co.
Jarecki Mfg. Co.
Kellogg, M. W., Co.
Murray Tool & Supply Co.
National Supply Co.
National Tube Co.
Republic Iron & Steel Co.
Ryerson, Jos. T., & Sons, Inc.
South Chester Tube Co.
Spang, Chalfant & Co., Inc.
Superior Tube Co.
Wheeling Steel Corp.
Pipe—Wrought Iron—
Byers, A. M., Co.
Frick-Reid Supply Co.
Greenspon's, Jos., Sons Iron & Steel Co.
Oil Well Supply Co.
Reading Iron Co.
South Chester Tube Co.
Superior Tube Co.
Pipe and Nipple Threading Machines—
Bignall & Keeler Machine Works.
Cox & Sons Co., The
Landis Machine Co.
Ryerson, Jos. T., & Sons, Inc.
Pipe Clamps (See Clamps—Pipe)
Pipe Grips—
Larkin & Co.
Pipe Headers—
National Tube Co.
Newton Process Mfg. Co.
Pipe Line Coatings—
Hill Hubbell & Co.
Pipe Line Construction Tools—
National Transit Pump & Machine Co.
Pipe Line Equipment—
Gaso Pump & Burner Mfg. Co.
Pipe Screwing Machines—
Buckeye Traction Ditcher Co.
Pipe Straightening Machines—
W-K-M Co., Inc.
Pipe Suspension Device—
Stearns-Rogers Co.
Pipe Threaders—Power—
Williams Tool Corp.
Pipe Tools —
Armstrong Brothers Tool Co.
Nye Tool & Machine Works.
Piping—Fabricated—
Midwest Piping & Supply Co.
Piping—Hard Rubber—
United States Rubber Co.
Piping—Steel & Iron—
Crane Co.
Greenspon's, Jos., Sons Iron & Steel Co.
Power Piping Co.
Pistons—
Guiberson Corp.
Heppenstall Forge & Knife Co.
Pistons—Expansion—
Wilson Oil Tool Corp.
Pistons—Slush Pump—
Guiberson Corp.
Plugs—Bottom Water—
Guiberson Corp.
Power Units—Portable (See Engines)—
Pre-Heaters—
National Gas Products Co.
Newton Process Mfg. Co.
Ross Heater & Mfg. Co., Inc.
Preservatives—Asphalt—
American Asphalt Paint Co.
Pulleys—Wood, Iron and Steel—
Continental Supply Co.
Dodge Mfg. Co.
Pulling Machines—
Iron King Mfg. Co.
National Supply Co.
Safety Pulling Machine Co.
Pumpers—Long Stroke—
Farley Machine Co.
Pumping and Pulling Motors—Electric—
Westinghouse Electric & Mfg. Co.
Pumping Equipment—
American Well Works.
Axelson Machine Co.
Bryson Jackson Pump Mfg. Co., Inc.
D & B Pump & Supply Co.
Farley Machine Co.
Goulds Pumps, Inc.
Jones, S. M., Co.
Myers, F. E., Bros. & Co.
Northrup Equipment Co.
Oil Well Supply Co.
Prescott Co.
Ratigan, J. P., Co.
Waukesha Motor Co.
Pumping Gear Units—
Nuttall, R. D., & Co.
Pumping Jacks (See Jacks)—
Pumping Powers—
Bessemer Gas Engine Co.
Buda Co.
Frick-Reid Supply Co.
Jones, S. M., Co.
Kansas City Hay Press Co.
Marion Mch., Fdy. & Supply Co.
National Supply Co.
Oil Well Supply Co.
Pattin Bros. Co.
Reid, Joseph, Gas Engine Co.
Spence Machine Co.
Titusville Iron Works Co.
Pumps—Boiler Feed—
Ajax Iron Works.
Byron Jackson Pump Mfg. Co., Inc.
Fairbanks-Morse & Co.
Gardner Governor Co.
Goulds Pumps, Inc.
Oil Well Supply Co.
Pumps—Centifrugal—
American Well Works.
Byron Jackson Pump Mfg. Co., Inc.
Dean Hill Pump Co.
Fairbanks-Morse & Co.
Goulds Pumps, Inc.
Worthington Pump & Machinery Corp.
Pumps—Direct Driven—
Bessemer Gas Engine Co.
Pumps—Electric—
Prescott Co.
Pumps—Fuel Oil Service—
Blackmer Pump Co.
Goulds Pumps, Inc.
Northern Fire Apparatus Co.
Pumps—Fuel Oil Transfer—
Blackmer Pump Co.
Byron Jackson Pump Mfg. Co., Inc.
Pumps—Gasoline and Oil for Filling Stations—
Gilbert & Barker Mfg. Co.
Pumps—Gear Driven—
Gaso Pump & Burner Mfg. Co.
Lucey Mfg. Corp.
Prescott Co.

XUM

Pumps—Hot Oil—
Blackmer Pump Co.
Byron Jackson Pump Mfg. Co., Inc.
Goulds Pumps, Inc.
Pumps—Pipe Line—
Byron Jackson Pump Mfg. Co., Inc.
Frick-Reid Supply Co.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
Goulds Pumps, Inc.
National Transit Pump & Machine Co.
Prescott Co.
Worthington Pump & Machinery Corp.
Pumps—Power—
Dean Brothers Co.
Fairbanks-Morse & Co.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
Goulds Pumps, Inc.
Myers, F. E., Bro. & Co.
National Transit Pump & Machine Co.
Novo Engine Co.
Prescott Co.
Waukesha Motor Co.
Pumps—Refinery—
Blackmer Pump Co.
Byron Jackson Pump Mfg. Co., Inc.
Dean Hill Pump Co.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
Goulds Pumps, Inc.
National Transit Pump & Machine Co.
Northern Fire Apparatus Co.
Pumps—Rotary—
Blackmer Pump Co.
Goulds Pumps, Inc.
Northern Fire Apparatus Co.
Roots, P. H. & F. M., Co.
Pumps—Sand—
Bridgeport Machine Co.
Larkin & Co.
Pumps—Slush—
Gardner Governor Co.
Pumps—Steam—
Dean Brothers Co.
Fairbanks-Morse Co.
Frick-Reid Supply Co.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
Lucey Mfg. Corp.
National Transit Pump & Machine Co.
Oil Well Supply Co.
Prescott Co.
Pumps—Suction—
Gaso Pump & Burner Mfg. Co.
Pumps—Vacuum—
Bessemer Gas Engine Co.
Chicago Pneumatic Tool Co.
Clark Brothers Co.
Gaso Pump & Burner Mfg. Co.
Miller Improved Gas Engine Co.
Roots, P. H. & F. M., Co.
Ross Heater & Mfg. Co., Inc.
Pumps—Water—
American Well Works.
Byron Jackson Pump Mfg. Co., Inc.
Gaso Pump & Burner Mfg. Co.
Goulds Pumps, Inc.
Northern Fire Apparatus Co.
Prescott Co.
Punch—Rotary Belt—
Victor Balata & Textile Belting Co.
Purifiers—Oil Absorption—
Sharpless Specialty Co.
Pyrometers—
Brown Instrument Co.
Republic Flow Meters Co.

R

Ratchet Pipe Cutters—
Toledo Pipe Threading Machine Co.
Ratchet Pipe Threaders—
Nye Tool & Machine Works.
Toledo Pipe Threading Machine Co.
Ratchet Reamers—
Nye Tool & Machine Works.
Ratchet Stocks and Dies—
Nye Tool & Machine Works.
Toledo Pipe Threading Machine Co.
Receiving Boxes—
Reid, Joseph, Gas Engine Co.
Recorders—Differential Pressure—
Equitable Meter & Mfg. Co.
Metric Metal Works.
Refinery Equipment—
American Radiator Co.
Braun, C. F., & Co.
Carbondale Machine Co.
Chicago Bridge & Iron Works.
Graver Corp.
Griscom-Russell Co.
Kellogg, M. W., Co.
McKee, Arthur G., & Co.
Newton Process Mfg. Co.
Petroleum Appliance Co.
Petroleum Iron Works Co.
Power Piping Co.
Power Specialty Co.
Reid, Joseph, Gas Engine Co.
Ross Heater & Mfg. Co., Inc.
Ross-Mehan Foundries.
Smith, A. O., Corp.
Smith Separator Co.
Southwestern Engineering Co., Inc.
Southwestern Engineering Corp.
United Iron Works, Inc.
Universal Oil Products Co.
Vogt, Henry, Machine, Co.
Walsh & Weidner Boiler Co.
Westcott & Greis.
Widdell Engineering Co.
Refractories—Furnace, Stills and Baffles—
Botfield Refractories Co.
National Gas Products Co.
Refrigerating Machinery—
Carbondale Machine Co.
United Iron Works, Inc.
Vogt, Henry, Machine Co.
Regulators—
Fisher Governor Co., Inc.
Gilfillan Machine Works.
Smith Separator Co.
Regulators—Gas—
Chaplin-Fulton Mfg. Co.
Davis, G. M., Regulator Co.
Equitable Meter & Mfg. Co.
Fisher Governor Co.
Metric Metal Works.
National Gas Products Co.
Smith Separator Co.
Rental Service—
Bridgeport Machine Co.
Reversible Clutches—
Bessemer Gas Engine Co.
Rig Irons—
International Supply Co.
Lucey Mfg. Corp.
National Supply Co.
Oil Well Supply Co.
Parkersburg Rig & Reel Co.
Rigs—Drilling, All Steel—
International Derrick & Equipment Co.
Moore, Lee C., & Co., Inc.
Rigs—Portable Drilling—
National Supply Co.
National Turnbuckle Derrick Co.
Star Drilling Machine Co.
Rod Guides—
Meier, E. C., Lubricating Co.
Rods—Polish—
Jones, S. M., Co.
Rods—Pull—
Axelson Machine Co.
Columbus Sucker Rod Co.
Jones, S. M., Co.
Sheffield Steel Corp.
Rods—Sucker—
Axelson Machine Co.
Columbus Sucker Rod Co.
D & B Pump & Supply Co.
Frick-Reid Supply Co.
Jones, S. M., Co.
National Supply Co.
Oil Well Supply Co.
Republic Supply Co.
Sheffield Steel Corp.
Rods—Valve—
Jones, S. M., Co.
Roofing—Asbestos—
Johns-Mansville, Inc.
Rope Socket Metal—
Eagle-Picher Lead Co.
Rope—Manila—
Ajax Rope Co., Inc.
Boviard Supply Co.
Republic Supply Co.
Rope—Wire—
Ajax Rope Co., Inc.
American Cable Co.
Bovaird Supply Co.
Bridgeport Machine Co.
Broderick & Bascom Rope Co.
International Supply Co.
Jarecki Mfg. Co.
Leschen, A. & Sons, Rope Co.
Wickwire-Spencer Steel Corp.
Williamsport Wire Rope Co.
Rotary Bit Steel—
Andrews Steel Co.
Heppenstall Forge & Knife Co.
Rotary Drilling Equipment—
Emsco Derrick & Equipment Co.
Frick-Reid Supply Co.
International Derrick & Equipment Co.
Link-Belt Co.
Lucey Mfg. Corp.
National Supply Co.
Oil Well Supply Co.
Republic Supply Co.
Titusville Iron Works Co.
Rotary Lines (See Rope—Wire)—
Rotary Post—
Reed Roller Bit Co.
Rotary Tool Joints—
Bartlesville Supply Co.
Hughes Tool Co.
Rubber Hose (See Hose)—
Run Down Tanks (See Tanks)—
Rust Preventatives—
Dearborn Chemical Co.
Eagle-Picher Lead Co.

S

Sand Lines—Manila—
Ajax Rope Co., Inc.
Plymouth Cordage Co.
Sand Lines—Wire—
Ajax Rope Co., Inc.
Broderick & Bascom Rope Co.
Wickwire-Spencer Steel Corp.
Screens—Oil Well—
Layne & Bowler Co.
Screens—Water Well—
Layne & Bowler Co.
Screws Temper—
Burns Tool Co.
Seamless Steel Couplings (See Couplings Seamless Steel)—
Separators—Centrifugal—
Miller, Max B., & Co.
Sharpless Sepcialty Co.
Volz Engineering Equipment Co.
Separators—Gas and Oil—
Smith Separator Co.
Sheet Lead—Chemical and Antimonial—
Eagle-Picher Lead Co.
Sheets—Corrugated, Black and Galvanized—
American Sheet & Tin Plate Co.
Ryerson, Jos. T., & Son, Inc.
United Alloy Steel Corp.
Sheets—Steel—
American Sheet & Tin Plate Co.
Republic Iron & Steel Co.
Sheffield Steel Corp.
United Alloy Steel Corp.
Shingles—Asbestos—
Johns-Mansville, Inc.
Sleeves—
Dayton Pipe Coupling Co.
Dresser, S. R., Mfg. Co.
Sleeves—Split—
Dayton Pipe Coupling Co.
Dresser, S. R., Mfg. Co.
Slush Pump Pistons (See Pistons)—
Slush Pumps (See Pumps)—
Smoke Stacks—
Donovan Boiler Works.
Snuffers—Fire—
Simplex Equipment Co.
Sockets—
Acme Fishing Tool Co.
Bridgeport Machine Co.
Spang & Co.
Sockets—Sucker Rod—
Guiberson Corp.
Sockets—Swivel—
Arbon, Paul, & Co.
Sockets—Wire Rope—
Chicago Steel Foundry Co.
Soda Ash—
Mathieson Alkali Works, Inc.
Soda—Caustic—
Mathieson Alkali Works, Inc.
Solders—Bar and Wire
Eagle-Picher Lead Co.
Hoyt Metal Co.
Spark Plugs—
Mosier Metal Products Corp.
Spears—
Acme Fishing Tool Co.
Brown Tool Co., Inc.
Special Steel (See Steel Special)—
Split Sleeves (See Sleeves)—
Sprockets—Power Transmission—
Ajax Iron Works.
Chain Belt Co.
Stands—Vice—
Nye Tool & Machine Works.
Stationary Pipe Threading Die Heads (See Die Heads)—
Steel—All Kinds—
Ryerson, Jos., T., & Son, Inc.
Steel—Alloy—
Central Steel Co.
Timken Roller Bearing Co.
United Alloy Steel Corp.
Steel—Bit—
Central Steel Co.
Steel—Hot Rolled Strip—
Central Steel Co.
Steel—Special—
Andrews Steel Co.
Central Steel Co.
United Alloy Steel Corp.
Steel Band Wheels (See Band Wheels—Steel)—
Steel Bridges (See Bridges)—
Steel Bull Wheels (See Bull Wheels—Steel)—
Steel Castings (See Castings)—
Steel Couplings for Casing, Line Pipe, Drill Pipe and Tubing (See Couplings)—
Steel Crown Blocks (See Crown Blocks)—
Steel Derricks (See Derricks)—
Steel Fabricators—Structural—
Austin Co.
Braden Co.
Graver Corp.
International Derrick & Equipment Co.
Steel Fittings (See Fittings)—
Steel Pitmans—
International Derrick & Equipment Co.
Moore, Lee C., & Co., Inc.
Steel Plate Construction—
Chicago Bridge & Iron Works.
Graver Corp.
Kaw Steel Construction Co.
Petroleum Iron Works Co.
Vogt, Henry, Machine Co.
Steel Sheets (See Sheets, Steel)—
Steel Valves (See Valves, Steel)—
Steel Walking Beams (See Walking Beams—Steel)—
Steel Wheels and Tug Rims—
International Derrick & Equipment Co.
Stills—
Chicago Bridge & Iron Works.
Graver Corp.
Kaw Steel Construction Co.
Kellogg, M. W., Co.
McKee, Arthur G., & Co.
Newton Process Mfg. Co.
Petroleum Iron Works Co.
Smith, A. O., Corp.
Vogt, Henry, Machine Co.
Widdell Engineering Co.
Stocks & Dies—
Borden Co.
Nye Tool & Machine Works.
Toledo Pipe Threading Machine Co.
Structural Steel Fabricators (See Steel Fabricators)—
Stuffing Boxes—
Axelson Machine Co.
Kansas City Hay Press Co.
Sucker Rods (See Rods—Sucker)
Suction Pumps (See Pumps)—
Sulphuric Acid—
Eagle-Picher Lead Co.
Superheaters—Steam—
Power Plant Equipment Co.
Swabs—
Arbon, Paul, & Co.
Burt Corporation.
Guiberson Corp.
Simplex Equipment Co.
Swedge Nipples—
Dresser, S. R., Mfg. Co.
Harrisburg Pipe & Pipe Bending Co.
Swing Line Equipment—
Brooks Engineering Corp.
Swivels—
Layne & Bowler Co.
Lucey Mfg. Corp.
Titusville Iron Works Co.

T

Tank Cars (See Cars—Tank)—
Tank Cars Leased (See Cars)—
Tank Equipment—
Brooks Engineering Corp.
Oil Conservation Engineering Co.
Tanks—Bolted—
Butler Mfg. Co.
Maloney Tank Mfg. Co.
Parkersburg Rig & Reel Co.
Tanks—Bulk Station—
Butler Mfg. Co.
Graver Corp.
Tanks—Cylindrical—
Petroleum Iron Works Co.
Tanks—Elevated Steel—
Chicago Bridge & Iron Works.
Tanks—Field Storage—
American Car & Foundry Co.
Donovan Boiler Works.
Graver Corp.
Kaw Steel Construction Co.
Kewanee Boiler Co.
Maloney Tank Mfg. Co.
Petroleum Iron Works Co.
Pittsburgh-Des Moines Steel Co.
Riter-Conley Co.
United Iron Works, Inc.
Tanks—Horizontal Storage—
Graver Corp.
Kaw Steel Construction Co.
Maloney Tank Mfg. Co.
Tanks—Run Down—
Donovan Boiler Works.
Graver Corp.
Kaw Steel Construction Co.
Newton Process Mfg. Co.
Tanks—Truck—
Butler Mfg. Co.
White Co.
Tanks—Underground—
Butler Mfg. Co.
Gilbert & Barker Mfg. Co.
Graver Corp.
Kewanee Boiler Co.
Pittsburgh-Des Moines Steel Co.
Tanks—Welded—
Chicago Bridge & Iron Works.
Taper Taps—
Hughes Tool Co.
Tapes—Measuring for Oil Gauging—
Lufkin Rule Co.
States Engineering Co.
Temper Screws (See Screws)—
Thermometers—Indicating and Recording—
American Schaeffer & Budenberg Corp.
Bristol Co.
Taylor Instrument Co.
Threading Machines—
Bignall & Keeler Machine Wks.
Cox & Sons Co., The.
Landis Machine Co.
Thread Protectors—
Spang & Co.
Tightener—Belt—
Victor Balata & Textile Belting Co.
Tires—Automobile—
Continental Supply Co.
Tongs—
Bridgeport Machine Co.
Wilson Oil Tools Corp.
Tongs—Back Up—
Williams, J. H., & Co.
Tongs—Break Out—
Reed Roller Bit Co.
Williams, J. H., & Co.
Tongs—Casing—
Dunn Mfg. Co.
Guiberson Corp.
Tongs—Chain Pipe—
Armstrong Bros. Teol Co.
Williams, J. H., & Co.
Tongs—Pipe—
National Transit Pump & Machine Co.
Tongs—Rotary—
Dunn Mfg. Co.
Tongs—Tool Joint—
Guiberson Corp.
Hughes Tool Co.
Reed Roller Bit Co.
Tongs—Tubing—
Dunn Mfg. Co.
Tool Chests—Pipe—
Nye Tool & Machine Works.
Tool Joints—
Bridgeport Machine Co.
Federal Supply Co.
Hughes Tool Co.
Lucey Mfg. Corp.
Oil Well Supply Co.
Regan Forge & Engineering Co.
Torches—
Oxweld Acetylene Co.
Tractor Oil (See Oil—Tractor)—
Tractors—
Cleveland Tractor Co.
International Harvester Co. of America.
Trailers—
Spencer Trailer Co.
Transmission Belt—Rubber—
Goodrich, B. F., Rubber Co.
United States Rubber Co.
Transmission Lining—
Stanley Belting Corp.
Traveling Block—
Lucey Mfg. Corp.
Regan Forge & Engineering Co.
Wright Mfg. Co.
Trenchers—Vertical Boom—
Barber-Greene Co.
Trucks—Motor—
Ford Motor Co.
General Motors Truck Co.
Graham Brothers.
International Harvester Co. of America.
White Co.
Truck Tanks (See Tanks)—
Truck Tires (See Tires—Truck)—
Tubes—Boiler, Charcoal Iron—
Byers, A. M., Co.
Reading Iron Co.
Tubes—Boiler Steel—
Continental Supply Co.
National Tube Co.
Ryerson, Jos. T., & Sons, Inc.
Tubing—
Babcock & Wilcox Tube Co.
Byers, A. M., Co.
Central Tube Co.
Continental Supply Co.
National Tube Co.
Reading Iron Co.
South Chester Tube Co.
Spang, Chalfant & Co., Inc.
Superior Tube Co.
Wheeling Steel Corp.
Tubing Catchers—
Continental Supply Co.
Dunn Mfg. Co.
Guiberson Corp.
Tubing Protectors (See Rod Guides)—
Tubular Goods—
Central Tube Co.
Continental Supply Co.
Oil Well Supply Co.
Republic Iron & Steel Co.
Spang, Chalfant & Co., Inc.
Wheeling Steel Corp.
Tubular Goods—Wrought Iron—
Byers, A. M., Co.
Reading Iron Co.
Turbines for Lighting Equipment
Lucey Mfg. Corp.
Westinghouse Electric & Mfg. Co.
Turbine Generators (See Generators—Turbine)—
Turnbuckle Derricks (See Derricks)—

U

Underground Tanks (See Tanks)
Underreamer Body Steel—
Andrews Steel Co.
Heppenstall Forge & Knife Co.
Underreamers—
Bridgeport Machine Co.
Brown Tool Co., Inc.
Guiberson Corp.
Wilson Oil Tools Corp.
Unions—
Jefferson Union Co.

V

Valuations—
American Appraisal Co.
Valves—Balata—
Victor Balata & Textile Belting Co.
Valves—Blow-Off—
Homestead Valve Mfg. Co.
Valves—Brass and Bronze—
Homestead Valve Mfg. Co.
Lunkenheimer Co.
Reading Steel Casting Co.
Walworth Mfg. Co.
Valves—Cast Steel—
Chapman Valve Mfg. Co.
Homestead Valve Mfg. Co.
Valves—Check—
Gaso Pump & Burner Mfg. Co.
Lunkenheimer Co.
Valves—Drop Forged Steel—
Edward Valve & Mfg. Co.
Vogt, Henry, Machine Co.
Valves—Gate—High and Low Pressure—
Chapman Valve Mfg. Co.
Crane Co.
Darling Valve & Mfg. Co.
Kennedy Valve Mfg. Co.
Kerotest Mfg. Co.
Ludlow Valve Mfg. Co.
Lunkenheimer Co.
Murray Tool & Supply Co.
Powell, Wm., Co.
Valves—Iron—
Chapman Valve Mfg. Co.
Lunkenheimer Co.
Reading Steel Casting Co.
Valves—Metal Pump—
Durabla Mfg. Co.
Valves—Pump—
United States Rubber Co.
Valves—Relief—Supersensitive—
Davis, G. M., Regulator Co.
Valves—Steel—
Chapman Valve Mfg. Co.
Edward Valve Mfg. Co.
Kerotest Mfg. Co.
Lunkenheimer Co.
Metric Metal Works.
Powell, Wm., Co.
Reading Steel Casting Co.
Valves—Tank Vent—
Brooks Engineering Corp.
Oil Conservation Engineering Co.
Valves—Working Barrel—
Atlas Ball Co.
Axelson Machine Co.
D & B Pump & Supply Co.
Hough, Charles N., Mfg. Co.
Northup Equipment Co.
Oil Well Supply Co.
Varnishes—
Arco Company, The.
Detroit Graphite Co.
Sherwin-Williams Co.
Ventilators—Rotary—
Swartwout Co.
Vises—Bench—
Nye Tool & Machine Works.
Vises—Pipe—
Nye Tool & Machine Works.
Vises—Post—
Nye Tool & Machine Works.

W

Wagons—Truss Wheel—
Athey Truss Wheel Co.
Walking Beams—Steel—
Emsco Derrick & Equipment Co.
Moore, Lee C., & Co., Inc.
Water Cooling Systems—
Power Plant Equipment Co.
Water Softeners and Filters—
Butler Mfg. Co
Graver Corp.
Wax—
Barnsdall Refining Co.
Gulf Refining Co.
Pure Oil Co.
Weight Indicators—
Hughes Tool Co.
Welding Accessories—Electric—
Wilson Welder & Metals Co.
Welding and Cutting Apparatus—
Oxweld Acetylene Co.
Welding Machines—Electric—
Wilson Welder & Metals Co.
Welding Supplies—
Oxweld Acetylene Co.
Welding Wire—
Frick-Reid Supply Co.
Oxweld Acetylene Co.
Wilson Welder & Metals Co.
Well Shooting—
Eastern Torpedo Co.
Zero Hour Torpedo Co.
Wheels—Pipe Cutter—
Nye Tool & Machine Works.
Wheels—Steel Automotive—
Budd Wheel Co.
Winches—
Braden Co.
Brooks Engineering Co.
Oil Conservation Engineering Co.
Wire Lines (See Cables—Steel)—
Wood Patterns and Models—
Gaso Pump & Burner Mfg. Co.
Working Barrels—
Axelson Machine Co.
D & B Pump & Supply Co.
Franklin Valveless Engine Co.
Frick-Reid Supply Co.
Hough, Charles N., Mfg. Co.
McGregor Working Barrel Co.
Norris, W. C.
Northrup Equipment Co.
Oil Well Supply Co.
Wrenches—Closet Spuds—
Nye Tool & Machine Works.
Wrenches—Drop Forged—
Williams, J. H., & Co.
Wrenches—Pipe—
Trimont Mfg. Co.
Walworth Mfg. Co.
Wrenches—Ratchet—
Dresser, S. R., Mfg. Co.
Nye Tool & Machine Works.

Z

Zinc Oxide—
Eagle-Picher Lead Co.

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Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS

Pipe Line Statement for March

Runs

	Month	Dy. Av.
*Prairie Pipe Line Co.	3,844,000	124,000
Gulf Pipe Line Co.	1,032,048	33,292
Texas Pipe Line Co.	481,623	15,536
Magnolia Petroleum Co.	1,142,666	36,860
Cosden Pipe Line Co.	904,789	29,187
Empire Pipe Line Co.	682,764	22,025
*Sinclair Pipe Line Co.	1,489,674	48,054
*Other lines	8,091,000	261,000
Total March	17,668,564	569,953
Total Feb.	16,245,347	544,475
Difference	2,423,217	25,478

Shipments

	Month	Dy. Av.
†Prairie Pipe Line Co.	4,588,038	148,001
Gulf Pipe Line Co.	1,117,185	36,035
Texas Pipe Line Co.	759,387	24,496
Magnolia Petroleum Co.	1,490,078	48,067
Cosden Pipe Line Co.	633,864	20,447
Empire Pipe Line Co.	758,407	24,465
†Sinclair Pipe Line Co.	2,700,289	87,106
*Other lines	8,494,000	274,000
Total March	20,540,959	662,617
Total Feb.	19,168,415	618,333
Difference	1,372,544	44,284

Stocks

*Prairie Oil & Gas Co.	27,210,000
*Prairie Pipe Line Co.	2,000,000
Gulf Pipe Line Co. and Gypsy Oil Co.	6,378,816
The Texas Company	3,759,040
Magnolia Petroleum Co.	5,142,309
Cosden Pipe Line Co.	1,856,367
Empire Pipe Line Co.	2,814,802
*Sinclair Crude Oil Purchasing Co.	21,100,000
Carter Oil Co.	14,600,000
*Other lines	9,900,000
Total March	94,761,334
Total February	96,242,376
Difference	1,481,042

*Estimated. †Prairie shipments also include Texas crude oil and Sinclair shipments include Texas and Wyoming crude oil.

Note—Stocks do not include approximately 5,900,000 bbls. held in storage on private tank farms and leases.

EASTERN PIPE LINES

Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for March and April:

	Mar., '26	Apr., '26
Nat. Transit	152,572.78	175,931.37
S. W. Pa. P. L.	92,161.74	89,773.16
Eureka P. L.	373,065.58	372,871.02
Buckeye P. L. (Macksburg)	327,422.18	304,514.55
Buckeye P. L. (Cleveland)	11,923.54	12,060.87
Buckeye P. L. (Lima, etc.)	135,330.32	127,204.85
Indiana P. L.	10,428.03	9,095.76
Cumberland P. L.	284,867.52	273,842.36
N. Y. Transit	18,958.88	20,181.07
Tidewater P. L.	154,702.25	160,027.79
Pure Oil Co.	178,024.39	171,766.80
Emery P. L.	51,169.64	48,703.74
Indiana Ref.	86,931.73	93,143.14
Paragon Dev.	26,590.23	24,723.50
Pittsburgh P. L.	6,801.52	6,733.43
Total	1,910,950.33	1,890,573.41
Daily average	61,643.56	63,019.11

Note: Indian Refining Co. also reported other receipts of 301,677.79 bbls. Paragon Refining Co. had other receipts of 159,041.18 bbls. Paragon Development had other receipts of 2,227.34 bbls. Pure Oil had other receipts of 64,473.26 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for March and April:

	Mar., '26	Apr., '26
Nat. Transit	285,116.90	314,763.21
S. W. Pa. Pipe	389,473.31	409,564.75
Eureka P. L.	188,567.14	163,392.74
Buckeye P. L. (Macksburg)	130,098.28	94,254.91
Buckeye P. L. (Cleveland)	1,364.43	1,162.42
Buckeye P. L. (Lima, etc.)	744,048.97	823,641.06
Indiana P. L.	956,973.29	963,616.70
Cumberland P. L.	161,179.06	162,112.44
N. Y. Transit	579,234.50	668,407.25
Northern P. L.	130,218.72	133,960.96
Tidewater P. L.	174,944.54	93,030.34
Pure Oil Co.	217,525.82	205,777.75
Emery P. L.	48,128.83	45,829.05
Paragon Ref.	159,926.73	170,282.16
Indian Ref.	420,774.92	288,296.97
Paragon Dev.	33,731.97	26,494.22
Pittsburgh P. L.	7,088.04	6,539.32
Total	4,657,395.45	4,571,126.27
Daily average	150,238.56	152,370.87

Gross Stocks

The gross stocks held by various pipe lines in the oil producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky, at the close of March and April, were as follows:

	Mar., '26	Apr., '26
Nat. Transit	1,040,222.33	1,069,233.29
S. W. Pa. P. L.	690,133.67	688,704.11
Eureka P. L.	1,497,216.56	1,621,601.26
Buckeye P. L. (Macksburg)	351,943.86	417,370.13
Buckeye P. L. (Cleveland)	52,018.53	73,536.91
Buckeye P. L. (Lima, etc.)	2,301,324.72	2,369,543.33
Indiana P. L.	558,421.46	544,568.51
Cumberland P. L.	593,665.61	599,474.86
Southern P. L.	488,804.68	481,210.52
N. Y. Transit	731,527.82	695,608.61
Northern P. L.	458,451.24	436,138.52
Pure Oil Co.	429,500.88	460,534.48
Emery P. L.	32,243.81	34,514.24
Paragon Ref.	85,108.55	72,985.28
Indian Ref.	123,338.21	231,194.41
Paragon Dev.	4,370.50	4,918.23
Pittsburgh P. L.	.....	4,614.59
Total	9,438,292.43	9,805,851.27
Decrease	141,102.45	*367,558.84

*Increase.

Grades of Oil

The following table shows the amount of the different grades of oil held by the eastern pipe lines at the close of March and April, showing the gross stocks of the above fields:

	Mar., '26	Apr., '26
Penna.	3,842,525.79	4,076,568.47
Lima	958,283.05	947,707.33
Kentucky	1,166,146.58	1,163,245.60
Mid-Continent	3,408,098.00	3,459,618.16
Illinois	63,239.01	158,711.71
Total	9,438,292.43	9,805,851.27

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1923	1924	1925	1926
January	75,790	62,638	56,831	55,630
February	71,092	68,023	60,606	60,394
March	76,592	68,721	60,575	61,644
April	75,614	71,058	63,062	63,019
May	77,365	63,942	59,217	.....
June	77,593	63,230	61,270	.....
July	71,879	64,208	62,639	.....
August	76,910	59,942	59,686	.....
September	72,358	59,930	62,510	.....
October	76,256	64,796	60,995	.....
November	70,762	56,282	59,350	.....
December	69,271	55,814	57,974	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1923	1924	1925	1926
January	171,067	146,518	157,889	156,056
February	164,219	148,732	160,863	159,488
March	185,487	147,098	154,591	150,239
April	170,751	147,611	151,429	152,371
May	177,102	134,997	146,995	.....
June	173,598	143,010	149,467	.....
July	168,330	124,187	161,338	.....
August	142,776	123,120	161,730	.....
September	137,266	127,325	156,719	.....
October	134,597	123,170	145,388	.....
November	131,426	124,400	143,582	.....
December	139,909	151,392	150,162	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines, at the close of each month for the past three years:

	1924	1925	1926
January	12,907,202	11,353,276	9,859,170
February	11,844,068	11,192,924	9,579,354
March	10,906,752	11,158,297	9,438,292
April	10,922,742	11,062,082	9,806,851
May	11,335,309	11,207,562	.....
June	11,544,204	11,093,796	.....
July	12,062,361	11,067,453	.....
August	12,221,676	10,974,481	.....
September	12,206,836	10,781,753	.....
October	12,664,061	11,086,850	.....
November	12,268,530	11,068,158	.....
December	11,583,680	10,458,445	.....

Franklin Pipe Line Co.

The following table exhbits the condition of the Franklin Pipe Line at the close of business for the months named and not counted in the stocks and averages reported above:

	Receipts	Shipmts.	Stocks
1925—			
April	3,040.41	1,780.11	13,159.04
May	2,814.99	5,719.90	10,254.13
June	3,052.75	1,221.83	12,085.05
July	2,639.34	3,174.10	11,550.29
August	3,216.97	1,577.99	13,189.27
September	2,929.99	5,352.05	10,767.21
October	2,869.75	1,499.34	12,137.62
November	2,759.66	2,571.32	12,283.40
December	2,661.87	3,441.67	11,503.60
1926—			
January	2,990.16	1,478.35	13,015.41
February	2,580.23	2,776.19	12,819.45
March	2,754.62	1,732.77	13,841.30
April	3,137.40	4,519.68	12,459.02

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, May 1	2,740,384.77
Runs from wells	581,315.39
Other receipts	399,372.14
Regular deliveries	484,734.35
Other deliveries	523,336.85

The amount of Illinois oil run by the Tidewater Pipe Co. in April was 29,641.65 bbls. and deliveries were 22,869.65 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

1925—	
May	692,671.94 / 568,573.62
June	700,090.46 / 589,535.24
July	724,481.26 / 564,713.19
August	673,652.38 / 650,649.97
September	706,434.87 / 510,697.61
October	706,532.00 / 633,682.32
November	664,556.30 / 488,449.19
December	665,086.99 / 578,938.47
1926—	
January	665,243.62 / 516,083.76
February	632,611.99 / 506,310.51
March	753,300.74 / 524,625.95
April	610,957.04 / 487,604.00

The Tidewater Pipe Co., Ltd., also delivered in April, 75,798.73 bbls. of Oklahoma oil.

AVERAGE DAILY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF PORTS

Average bbls. per day—	ATLANTIC PORTS: Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS: Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total All Ports
January	9,355	13,484	32,581	19,387	5,097	79,804	.....	.....	.....	65	65	79,869
February	13,111	9,464	28,214	24,393	20,107	95,289	.....	.....	.....	.....	.....	95,289
March	7,000	2,516	48,839	16,513	16,902	91,870	.....	.....	.....	.....	.....	91,870
April	19,033	5,133	28,333	13,400	22,867	88,767	.....	.....	4,700	.....	.....	93,467

AVERAGE DAILY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

Average bbls. per day—	ATLANTIC PORTS: Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS: Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total All Ports
January	12,451	19,484	49,451	12,645	21,903	115,934	21,903	25,871	5,645	4,871	58,290	174,224
February	14,643	16,071	60,107	9,464	20,750	121,035	22,321	50,250	6,286	6,714	85,571	206,606
March	28,387	15,935	81,742	16,290	34,258	176,613	19,355	44,097	7,096	5,294	75,842	252,454
April	15,200	14,000	76,833	10,633	39,333	156,000	19,200	24,900	2,000	4,433	50,533	206,533

GROSS PRODUCTION OF THE UNITED STATES FOR 12 MONTHS

(IN BARRELS)

		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mountains	Eastern Fields	Total
April:	Month	17,959,052	14,055,450	13,695,365	2,971,110	7,560,230	1,767,077	2,744,691	3,084,000	62,837,576
	Daily average	598,655	468,515	423,179	99,037	252,008	58,903	91,490	102,800	2,094,586
May:	Month	18,820,328	14,443,675	13,077,697	3,493,266	11,813,996	1,886,752	2,799,542	3,167,300	69,502,556
	Daily average	607,107	465,925	421,861	112,686	381,097	60,863	90,308	102,171	2,242,018
June:	Month	19,288,135	13,832,970	12,602,540	3,229,440	9,200,372	1,830,965	2,754,498	3,289,000	66,127,920
	Daily average	642,938	461,099	420,085	107,648	306,672	61,032	91,816	109,000	2,204,264
July:	Month	20,411,049	14,263,565	12,337,598	3,686,675	7,835,819	1,898,178	3,129,199	3,348,000	66,910,083
	Daily average	658,421	460,116	397,984	118,925	252,768	61,231	100,942	108,000	2,158,390
August:	Month	21,095,589	14,441,040	11,936,079	3,558,087	7,450,580	1,858,543	3,250,448	3,177,000	66,677,357
	Daily average	677,599	465,480	385,032	114,777	240,341	59,727	104,853	102,484	2,150,883
September:	Month	20,062,763	14,826,040	11,264,890	3,393,270	6,457,950	1,776,570	3,235,625	3,212,000	64,228,108
	Daily average	668,759	494,168	375,496	113,109	215,265	59,219	107,854	107,067	2,140,937
October:	Month	20,015,076	14,921,199	11,196,511	3,477,146	6,409,281	1,871,830	3,394,990	3,248,000	64,534,033
	Daily average	645,648	481,329	361,178	112,166	206,751	60,382	109,500	104,774	2,081,743
November:	Month	19,095,907	14,590,980	10,650,087	3,221,760	5,927,955	1,758,882	3,088,121	2,992,000	61,325,693
	Daily average	636,530	486,366	355,003	107,397	197,599	58,629	102,937	99,753	2,044,190
December:	Month	19,249,711	14,123,848	10,930,455	3,308,816	6,047,883	1,763,966	3,187,164	3,086,900	61,698,743
	Daily average	620,959	455,608	352,596	106,736	195,093	56,902	102,812	99,552	1,990,283
January:	Month	19,069,562	13,674,813	10,880,814	3,250,536	5,489,620	1,606,952	3,136,280	3,014,000	60,122,578
	Daily average	615,147	441,123	350,994	104,856	177,084	51,836	104,396	97,226	1,939,438
February:	Month	17,163,963	12,387,620	9,689,120	2,877,812	4,756,836	1,583,904	2,769,605	2,931,000	54,159,860
	Daily average	612,999	442,415	346,040	102,779	169,887	56,568	98,914	104,678	1,934,281
March:	Month	18,825,786	14,312,886	10,757,341	3,334,887	5,115,837	1,889,946	3,151,250	3,216,000	60,603,933
	Daily average	607,283	461,706	347,011	107,577	165,027	60,966	101,653	103,742	1,954,973
	Total 12 months	230,967,514	169,873,086	138,018,497	39,802,805	84,066,359	21,493,565	36,641,413	37,865,200	758,728,439
	Daily average	632,620	465,433	378,133	109,049	230,319	58,886	100,388	103,740	2,078,708

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Total
Ports
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93,467

Total
Ports
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Total
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94,586
82,856
42,016
27,920
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56,390
77,357
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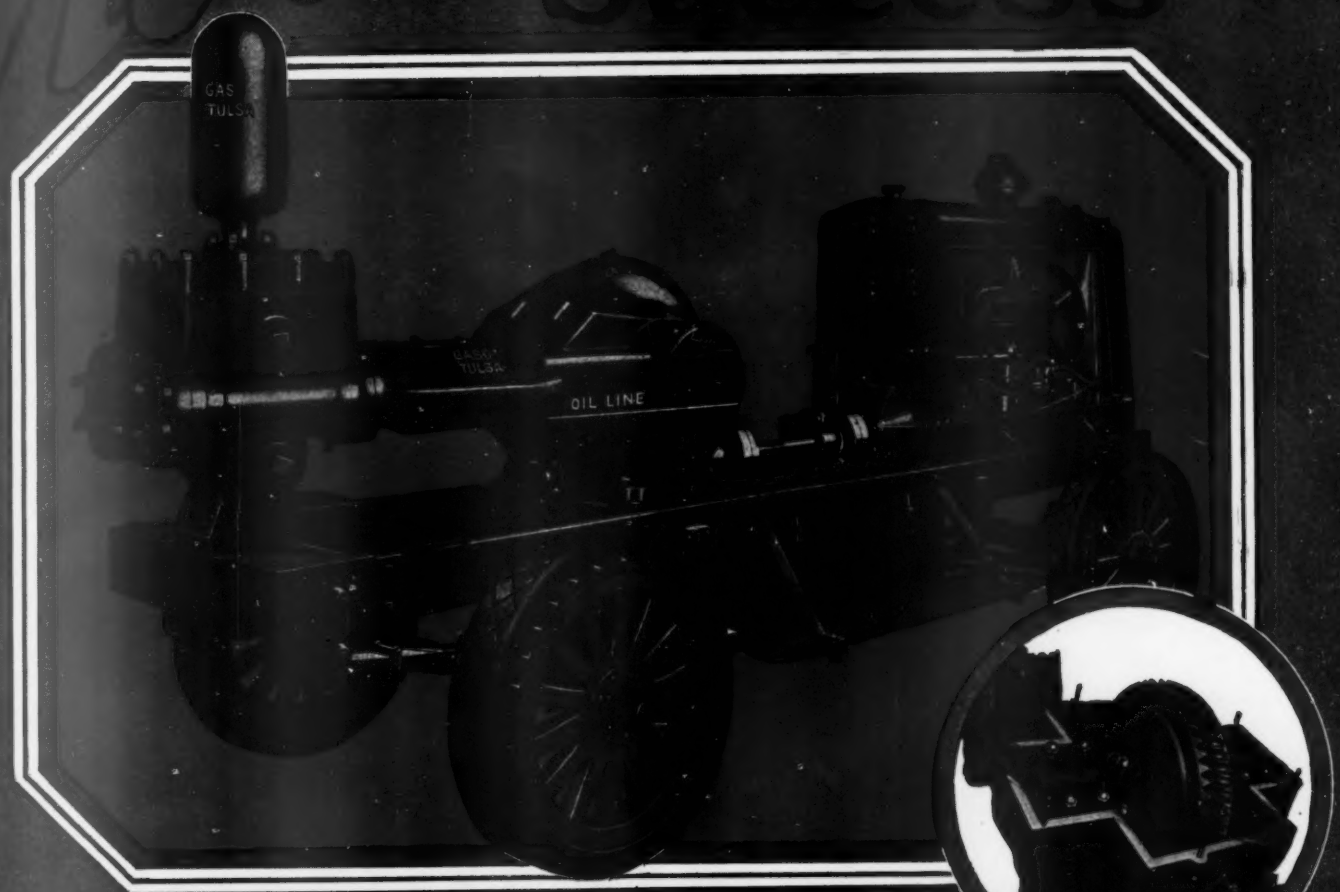
XUM

XUM

New Butane Instant Success



GASO Portable Pumping Plant
With Worm-Driven Self-Lubricating Power

Just the thing for Pipe Line Breaks
or Sand Pumping Pump Station and
Service—Water Supply in Drilling Operations

Three hours after the GASO Portable Pumping Plant
public appearance [at the 1925 Petroleum Exposition]
to mark it "Sold." Throughout the show it was a center
Since October, this latest addition to the GASO family has been
quickly sold to the field—and found to measure up fully to
capably built for rough usage—self lubricating—worm drive
power unit—offers a type of pumping plant
needed and which GASO is proud to present as its
This plant is furnished mounted on either a trailer or on
Let us send you detailed information.

GASO PUMP & BURNER MFG. COMPANY

SPECIFICATIONS

PUMP—Duplex double acting, outside-packed plunger, liquid ends, capacity from 2½ to 5½ gals. per stroke. Center sections, from 45 to 180 h.p. per unit at 100 lbs. pressure, to 250 bbls. per hour at 275 lbs. pressure. Has bronze fitted seat and valves, with stellite facings. Ball valves, all seats ground in housing and removable as one.

POWER UNIT—40 H.P. Buda four cylinder motor equipped with combination gasoline and natural gas carburetor. Pierce governor.

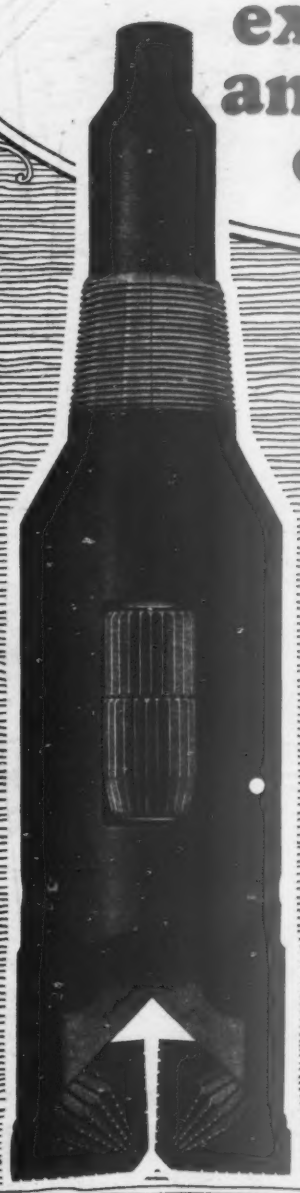
TRAILER—Standard truck, equipped with Air Cushion tires, 6 ton lever axles with Timken Roller Bearings. Front axle has regular automobile steering gear. Steering arrangement is unique. Four 45 Inch Vanadium Steel Springs.

GASO PUMPS
for every oil field need

XUM

BECAUSE

the perfection of the finished product is due to expert craftsmanship and complete modern equipment



you can depend on the

HUGHES ROCK BIT

for all rock drilling

HUGHES TOOL COMPANY

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